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## ORIGINAL ARTICLES.

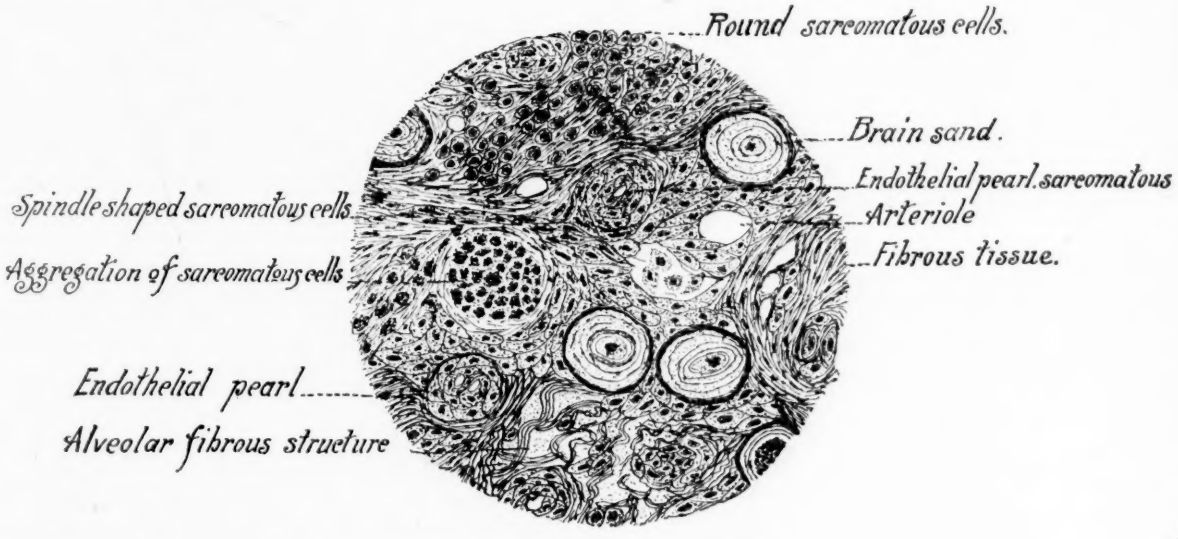
### REPORT OF A CASE OF CEREBRAL TUMOR, DIAGNOSED BY FOCAL SYMPTOMS, WITH OPERATION, SUCCESSFUL REMOVAL OF TUMOR AND EXHIBITION OF SPECIMEN.

Read before the Chicago Medical Society, Dec. 18, 1893.


BY D. A. K. STEELE, M.D.

CHICAGO.


In reporting to you a case of cerebral tumor diagnosed by focal symptoms and successfully removed, I desire to express my obligations to Drs. R. H. Isbester, O. A. King and W. E. Quine for a careful history, thorough examination and accurate diagnosis of the case before it was referred to me for operation, and to Dr. T. A. Davis for valuable assistance during and after the operation.




ENDOTHELIAL FIBRO-SARCOMA OF BRAIN.

The subject of cerebral tumors became interesting to surgeons in 1879 through the reports of cases by Macewen of Glasgow, and again especially in 1884, when Bennett and Godlee of London, arrested the attention of the surgical world by their narration of the diagnosis and removal of a subcortical tumor of the brain. Since then, many cerebral tumors have been diagnosed by focal symptoms and a few successfully removed. Horsley, Keen, Hirshfelder, Morse, Deaver, Nancrede and others have reported cases.

I desire to submit the following case as an addition to the literature of the subject:

The patient was referred from the Dispensary clinic of the College of Physicians and Surgeons to my regular Saturday clinic for operation in the early part of October. When I first saw the case I made a thorough examination, and placed the patient on large doses of iodid of potassium for the purpose of clearing up the question as to whether or not there might be syphilitic brain disease, although no history of any was elicited. Specific treatment produced no effect on his symptoms. November 18 the patient was operated upon. The history was as follows:

The patient, John Pierson, was born in Sweden, Jan. 18, 1852; he is 41 years old. He is the eldest of nine children, four boys and five girls. His family was always very healthy. His mother, brothers and sisters are living. His father died of old age at 77. He is a laboring man; married and has six children, four girls and two boys, all of whom are living. Upon arriving in this country, May 15, 1881, he went direct to Batavia, Ill., where he remained six years. He then went to St. Charles, Ill., and lived there until he came here for treatment.

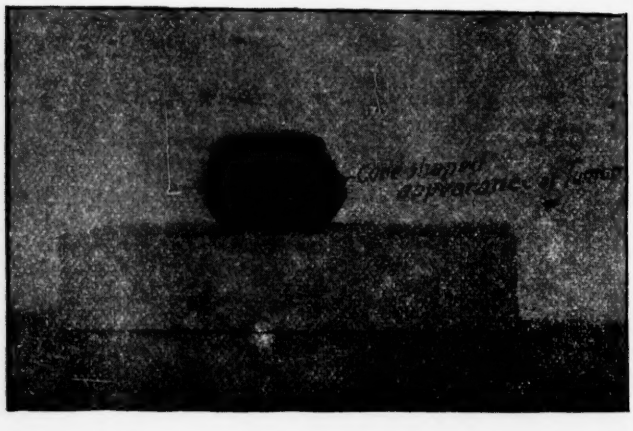
About five years ago the patient while asleep in bed was aroused by a sharp pain of a cramping character, in the calf of the right limb, which lasted from two to five minutes. It was very severe. This pain and the following plantar contraction of the toes, constituted the first attack. About one week later he had a second cramp, which was in severity the equal of the first. It occurred in the same region and was about the same duration. The cramps appeared at an interval of seven or ten days and were about as severe as the first. Just preceding a spasm there was a prickly, paresthetic feeling in the locality of the expected monospasm. Two things characterized these spasms: 1, that they extended up the right limb gradually until they reached the right groin; they then passed into and extended in the lower part of the trunk, when they became more painful; 2, after each spasm the limb was weaker, so that as the spasms became more frequent they caused a general weakening of the muscles and therefore lameness. The spasms continued to extend upward until the right arm and the face were affected. It took about one year for the whole right side to become affected. The spasm would always start in the same place, creep upward to the trunk, and then die away before the arm and face were affected. After the right side was affected the patient sometimes had a prickling sensation in the left leg, but at no time were there any spasms.

During the whole period of five years the patient never had an attack of unconsciousness. He often had very severe headaches, starting in the occipital region and extending to the frontal.

Examination showed motor paralysis and sensory blunting of the right leg; the right patella tendon reflex was much increased; hearing was much reduced in the right ear; there was no choke disc or optic neuritis; none of the orbital muscles were involved. Speech was slow. A diagnosis of cerebral tumor originating in the leg center of the cortical area of the left hemisphere of the brain, and extending downward and forward to the arm and face centers was made, and operation advised, after specific treatment was tried without avail.

The patient was prepared and I was ably assisted during the operation by Dr. T. A. Davis. The toilet of the operating field was thoroughly made the previous day; shaving and cleansing, and a wet 1-2000 bichlorid dressing applied to be worn until time of operation.

After the patient was thoroughly under chloroform a small solid cylindrical rubber band was passed around the head to render bloodless the field of operation in the scalp. Four stitches, as recommended by Dr. F. Shafer of this city, were introduced equidistant apart, binding the rubber constrictor to the scalp so as to prevent slipping. Owing to the extent of the symptoms, showing that the convolutions of the upper half on either side of the Rolandic fissure were involved, the nicety of delicate cerebral localization technique




Endothelial fibro-sarcoma of brain; weight 60 grams; base of tumor showing depression at point of attachment.

was dispensed with and a horse-shoe shaped flap of three inches width was turned down and fixed with one stitch to the integument beneath, to keep it out of the way of the operator. A large button of bone was then removed and the opening enlarged by the rougeur to a size corresponding to nearly that of the scalp flap, a little over three inches in diameter and heart-shaped. Palpation through the meninges showed great resistance over the region corresponding to an inch each side over the upper third of the Rolandic fissure. Below this region the resistance was normal. On opening through the meninges there was found absence of pulsation over the region corresponding to the part offering great resistance to palpation, and slight pulsation below that region.

Faradization with a double brain electrode over the dense tissue was followed by no muscular response, but at the lower margin of this tissue, and on down the Rolandic marginal convolutions there was responsive contraction of arm muscles, increasing as it distanced the dense tissue. Macroscopically the dense tissue presented a yellowish color and bulged into the wound. On digital exploration a tumor of considerable dimensions was found extending down into the brain and readily separable from it, a few slight adhesions of the tumor capsule alone offering any barrier. After outlining the free borders of the growth, a firm pedicle was found attached to the skull, or falx-cerebri at the region of the superior longitudinal sinus. The tumor was "shelled out" quite readily with the fingers leaving the firmer portion, the pedicle, which was removed with a strong curette, after cutting the skull away up to it with the rougeur forceps. A large rent in the superior longitudinal sinus was necessarily made on removing the pedicle, which necessitated firm packing with iodoform gauze of the whole intra-cranial wound. This readily controlled the hemorrhage, which was enormous for a few seconds; bnt it prevented the satisfactory closure of the wound with the return of the bone chips. The regular antiseptic dressing was applied and was not disturbed for three days, when the bulk of the gauze dressing was removed, leaving only one small piece over the rent into the sinus. At the second dressing, four days later the remaining piece of gauze was removed.

Slight constitutional disturbances followed the operation; temperature 101 degrees; operation fever for thirty-six hours followed by a decline to normal on third day. There was complete motor paralysis of arm and leg for twenty-four hours following the operation, at the end of which time slight motion returned to leg, and nineteen days later some motion was observed in the arm. Slight but steady improvement has occurred since that time. Although we expected from the origin of the tumor that sensation and motion would return in the arm first, as a matter of fact they returned promptly in the leg, and later in the arm. Sensation was first felt in the shoulder muscles, the next day he could move the arm and on the third day he could draw up the forearm; and now he has good control of the whole arm except the fingers. He has no power and but little sensation in the fingers. He tells me that he is capable of exercising some muscle or making some new movement each day. The patient is now able to sit up, is permitted to walk a little and is anxious to return to his home in time for Christmas.

Endothelial fibro-sarcoma of brain, side view.

The packing prevented the accurate suturing of the scalp; there was an opening of perhaps two inches through which the ends of the strips of gauze were drawn out. At the end of a week these edges were freshened and re-sutured. Now we have a small opening of half an inch through which I keep a minute strip of gauze for capillary drainage. There is granulation tissue covering the wound, and the patient has practically recovered. One week later the wound had firmly cicatrized and the patient returned home.

In regard to the character of the tumor, the specimen was submitted to the Pathological Laboratory of the College of Physicians and Surgeons. The examination was made by S. J. Sornberger and Prof. Evans. Under microscopical examination, both of the longitudinal sinus, that is, the pedicle of the tumor, and the tumor itself, the following characteristics are presented:

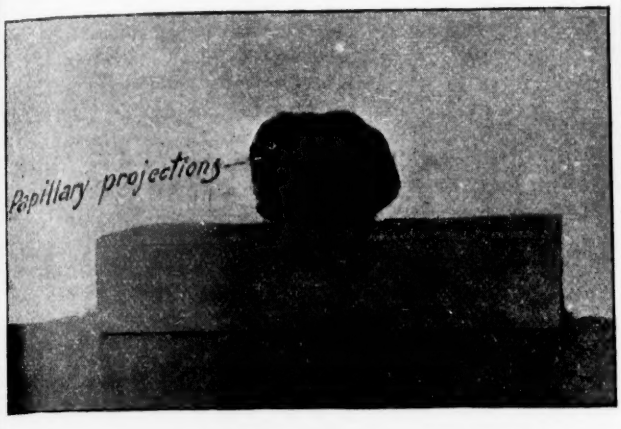
1. An abundant fibrous stroma, alveolar in appearance.

2. An abundance of endothelial cells, both large and small. These cells are in places crowded together in dense concentric masses, while others are scattered profusely among the fibers of connective tissue.

3. Calcareous granules, quite abundant, distributed throughout, but rather more abundant in the small tumor from the sinus, and near its upper margin.

*Diagnosis.*—Endothelial fibro-sarcoma.

*Remarks.*—As you examine the tumor which I submit to you for inspection, you will observe that it is cone-shaped, bearing a striking resemblance to a small pine cone, although somewhat more irregular in outline. It weighs exactly two ounces. Its vertical diameter is two and a half inches and the trans-




Endothelial fibro-sarcoma of brain, convex surface.

verse diameter two inches. The base is smooth and slightly depressed in the center where it was plucked from the stem or pedicle. The surface presents a papillomatous appearance, small finger-like or tuberous processes extending downward and outward in all directions but more marked around the apex of the tumor. If we invert it and place it in the same position it occupied in the brain, you will observe that it grows downward and forward from its point

Appearance of operation-wound at time of report.

of origin in the wall of the longitudinal sinus into the Rolandic fissure, displacing the paracentral lobules, and the surface irregularities are probably due to the varying amount of brain resistance to the outgrowth of the tumor. Some portions of it lying in the great fissure and the smaller projections pushing between the convolutions.

The reaction under the double brain electrode may be explained in part by the atrophy of the adjacent portion of the brain, or motor cells from pressure, and in part by mechanical displacement.

We would infer that the failure to elicit reflex spasm by electric stimulation of the leg center was due to mechanical displacement of the center upward and backward by the tumor, when we find that the removal of the tumor was followed by a prompt return of sensation and motion in the leg. While the slower return of the same function in the arm speaks for pressure atrophy of the motor cells of the arm center.

240 Wabash Avenue.

## THE TREATMENT OF IMMATURE CATARACT AND WHEN TO OPERATE FOR CATARACT.

Remarks made in a Conference During the Special Week on Cataract.

By Geo. E. de Schweinitz, M.D., Edward Jackson, M.D., S. D. Risley, M.D., and H. F. Hansell, M.D.

Professors and Adjunct Professors of Diseases of the Eye in the Philadelphia Polyclinic.

Dr. de Schweinitz, referring to the medicinal treatment of cataract, stated that no drugs were known which could dissipate lenticular opacities. Occasionally there was spontaneous disappearance of cataract, for example, in diabetic patients; and even, if certain reports are to be credited, for example those by Nicati, of true senile cataract; but such disappearance could not be ascribed to the influence of medicine.

In like manner, electricity, which from time to time has been recommended, is of doubtful value; in fact, there is no evidence to show that electrical currents have ever had the slightest influence in checking the growth of lenticular opacities. These statements, however, do not conflict with the propriety of treating the subjects of lenticular opacities; 1, by careful testing of the refractive error and prescribing the glass which gives the highest visual acuity; and 2, by exhibiting alteratives, particularly the iodids of soda and potash, sedatives, e. g. bromid of potash, and tonics; for example, strychnia and nux vomica. These, as has often been pointed out by Dr. Risley, diminish the congestion of the choroid coat, and while they do not check the growth of the cataract, they relieve the associated asthenopia and permit the patient reasonable use of his eyes. Moreover, as again urged by Risley, by improving the health of the ocular coats they tend to increase the chances of operative success whenever extraction becomes necessary.

Dr. de Schweinitz further discussed the advantage of the prolonged use of a mild mydriatic drug, not only for its local sedative effect but, in more advanced cases, on account of the improvement of vision through a moderately dilated pupil.

Referring to the artificial ripening of cataract, Dr. de Schweinitz, quoting White, said that these operations might be divided as follows: simple division of the anterior capsule; division combined with iridectomy, as advocated by Mooren; division and external massage (Rhomer); iridectomy and triturating the lens through the cornea, or Förster's method and the one commonly employed: paracentesis of the cornea, and internal massage directly on the anterior capsule, particularly advocated by Bett-

man of Chicago; and finally, simple paracentesis of the cornea with external massage—a method devised by Pooley and practiced and popularized by White of Richmond. All operations were dismissed except Förster's method, internal massage directly on the anterior capsule, and White's modification of Pooley's operation.

Dr. de Schweinitz's experience was limited to Förster's method and that advocated by Bettman, with neither of which he had had unfortunate results although, following the advice of Knapp, he believed that preliminary ripening operations were generally unnecessary, and preferred the risk of extracting an unripe cataract, believing that the remnants of cortical, if confined within the capsule, produced little or no harm and could afterward be treated by a needling operation. He referred to the statement of Schweigger that the usual criteria of ripeness, namely, opacity to the periphery and the absence of the shadow of the iris by lateral illumination, are erroneous after the sixtieth year of age, when the lens may be extracted with safety, even if it is partially unclouded.

Dr. de Schweinitz expressed the opinion that it was perfectly proper to operate on monocular ripe cataract, even if the opposite eye was unaffected and had normal vision; for the reasons that if successful the appearance of the eye (these monocular cataracts usually being very white) was improved, the visual field was increased, the lens was saved from the danger of undergoing fatty degeneration, and the patient was given an eye which might be used in case harm came to the other or unaffected organ.

DR. JACKSON.—As to the age at which extraction becomes necessary for the removal of a cataract, no hard and fast line can be drawn. Two days ago, I did extraction on a young man 16 years of age and found the nucleus as large and firm as it commonly is at 40. Apparently he had a senile cataract at an unusually early age.

As to the choice between extraction and iridectomy for partial congenital cataract, it must rest mainly on the acuteness of vision that is obtained with the dilated pupil. If this be good it may be worth the while to do an iridectomy, but otherwise extraction or discission should be practiced. Theoretically by saving the crystalline lens we should in young patients save some power of accommodation. But in such cases, the power of accommodation is so slight as to be scarcely worth considering in this connection. The changes in the lens that make it partially opaque destroy almost entirely its elasticity.

For a ripening operation, the reasons that have influenced me in preferring the Pooley-White operation are, that it is done without iridectomy and that it is done without the introduction of an additional instrument into the eye. Not many years ago, it was regarded as a very important rule not to introduce any instrument into the eye if it could possibly be avoided. The operation has proved very satisfactory in my hands, where the lens had reached a certain stage of development and where there was a firm nucleus. In such cases it has always succeeded. In cases where there was no hard nucleus in young persons it has completely failed.

The length of time required for the ripening varies. I have done extraction one week after the ripening operation, but there remained some clear cortex in the posterior portion of the lens, although vision had fallen from four-fiftieths to mere light perception. I have extracted an entirely opaque lens at the end of two weeks, but in other cases the period required for complete ripening was considerably longer. The operation is attended with very little reaction and I have never seen any iritic exudation or posterior synechia from it. Usually there is for two or three days a pericorneal zone and some little discoloration of the iris.

It may be seriously questioned whether ripening operations are necessary at all; whether it is not as well to extract the cataract still immature. With a large, hard nucleus after the age of 60 years, I would certainly do so. But where there is considerable cortical substance still clear and soft, the extraction will be easier and cleaner if some ripening operation has previously been done. I do not fear the leaving behind of some cortex so long as it is left inside the capsule, and not in the anterior chamber. I have never seen it interfere with the progress of healing, and at the worst it only renders necessary a subsequent needle operation.

As between an operation for preliminary ripening and a secondary operation after the extraction, I think the choice as to risk is small; but either of them is better than to keep a patient waiting for months or years for maturity of a cataract, after the second eye has become so far involved as to be no longer useful. Prolonged waiting in partial or complete blindness is so depressing to the patient's physical and mental health and vigor, that no gain in the ease and smoothness of the extraction can compensate for it. Marked improvement in the physical and mental condition after cataract extraction is quite frequently witnessed, and when a patient has progressed so far as to lose useful vision in the second eye, the time for a ripening operation or an immediate extraction has certainly arrived.

As to the removal of the crystalline lens for high myopia; the influence of the operation on the refraction is an additional reason for extraction, where myopia coëxists with partial opacity of the lens. In myopia of very high degree, uncomplicated and with fair vision, I would not do any such operation. There is, however, one class of cases in which it seems proper to resort to it, and that is the class of high myopia confined to one eye, or of myopia very much higher in one eye than in the other. In cases of this kind the extraction of the lens from the more myopic eye will sometimes enable the patient to use the two eyes together, and thus obtain the advantages of binocular vision.

As to monocular cataract, I think that when it is mature and the patient in favorable condition, it is always proper and best to remove it and so advise. But I am always careful to explain to the patient that it will not improve his vision; (assuming that this is good in the other eye) and that it will be impossible for him to use the two eyes together; that what he will gain will be the enlargement of his field of vision; and an eye that will, by the adjustment of the proper glass, be serviceable whenever the one he now uses fails him.

DR. RISLEY—The picture of immature cataract we are considering, I think should be studied with the pathologic background in view. In my lecture today I expressed the views which have seemed to me to be justified by my study of immature cataract, and since I have gone over this so re-

cently, and we have had such an excellent resumé of the subject by Dr. de Schweinitz, I will speak only of the management of these immature cataracts by operative interference. We should always keep the probability of their pathologic significance in mind. Having done all that is possible to restore the ocular health, then we may undertake the maturation or removal of these unripe cataracts. It seems to me we should be guided, in some measure at least, in the course to be adopted, by the condition of the urine. I must express my own conviction as in favor of the ripening operations combined with preliminary iridectomy. Since these cataracts are usually complicated, and the cortex is liable to stick to the capsule in our efforts to remove the lens, we should have as free an exit as possible, and this we secure by an iridectomy. Then, too, we should not lose sight of the therapeutic value of an iridectomy. I am sure you must have seen, again and again, tender eyes, the subject of intra-ocular inflammations; eyes which will not keep quiet long at a time, and are sure to go backward with any depreciation in the general health, grow rapidly better after iridectomy. And to my mind this is one of the signal advantages of iridectomy in this class of cases. Not only do you get the therapeutic value of the iridectomy, but it gives you an opportunity under the most favorable conditions, for adopting some method of maturation, and whether the lens is rubbed through the cornea or by direct trituration, it is more readily done and with less danger to the iris than without iridectomy.

I have again and again performed both direct trituration with a horn spatula upon the capsule of the lens, and more frequently still, have rubbed the lens through the cornea by means of the lid itself or the spatula, adopting a rotary, or up-and-down and to-and-fro movement of the spatula, being careful to lubricate the cornea with the tears, so that the epithelial layer of the cornea will not be injured. I have never seen any harm result from either of these procedures. I have occasionally failed to produce any result, but have always in such instances blamed myself for not having rubbed the lens with sufficient vigor.

It has seemed to me that the ripening of the cataract comes from breaking up the relation which exists between the capsule and the cortical layers of the lens, and that the rubbing must be done with sufficient vigor to bring about this result. Now, whether the fibers of the lens become opaque from simply bruising, as has been suggested, or whether their relation to the capsule has been disturbed and the nutritive supply cut off by this means is still an open question. To my mind the latter is the most plausible explanation of the increased opacity of the lens which results after the trituration process. You have all witnessed four cases at Wills' Hospital in which this operation had been performed. You remember the young woman who had an iridectomy performed and trituration through the cornea. In this case in two days there was a very marked increase in the opacification of the lens fibers. In the old woman whose cataract I extracted to-day, a preliminary iridectomy with trituration through the cornea, had been performed three months before, producing a marked increase in the opacification of the lens; but as you saw, in the periphery, particularly above, there was some transparent cortex; but nevertheless, the lens came out entire and left an entirely black pupil without any cortical remains in the anterior chamber. In the old man who had the atheromatous arteries, this process had also been carried out in the same manner only three weeks before. In that case there had been in the three weeks very marked increase in the opacification of the lens All irritation had subsided, and notwithstanding the serious pathologic condition of his eyes and his impaired health I did not hesitate at the end of three weeks to perform extraction. I think it was Dr. Jackson who has said that in his judgment the hard nucleus was one of the essential factors of success in this trituration process. Between the hard nucleus and the cornea you crush, as it were, the fibers of the cortex of the lens. I will say, therefore, again that my experience is in favor of these operations for maturation rather than for extraction without it. I perfer in most cases of immature cataract a preliminary iridectomy, since we get the early therapeutic value of an iridectomy, and also a wider exit for the lens itself, with less danger of bruising the iris. As to congenital cataract, I recall an experience I had in consultation with Dr. Norris at the University Hospital many years ago, when I had charge of the Dispensary as Chief. There was a young patient with double zonular cataract, and I called attention to it as one upon which he would possibly desire to operate. He said: "I have found in a great many cases, that these patients are markedly improved by strong glasses, and wish you would try these carefully before we do an iridectomy, or any other operation;" and to my surprise, with a plus 3 or 4 D. convex glass the vision came up from 20-200 to 20-40 or thereabouts. This is only one example of a considerable group I have seen since. In many of these cases of zonular cataract if you dilate the pupil and flood the eye with light, you will find the little elliptical zone of gray opacity, a transparent nucleus in its center and a transparent cortical on its outer side with a gray reflex showing through it, and in some cases I have been gratified, and all thought of operation dismissed from my mind by the results of careful corrections of refraction, or by the use of strong glasses which are always needful for near work, since the power of accommodation is usually *nil*. One of my procedures in these cases where the glass has been excluded is to dilate the pupil, and then, if the vision is materially improved by such dilatation, I consider the question of an iridectomy. The result, however, is often disappointing. I remember last summer having under care a young woman with zonular cataract, who was not willing to admit that we had given her any improvement by this means, and yet I could not see why. A broad iridectomy was not done; I purposely made a slit two or three millimeters wide, up and in, and it seemed to be typically placed. I could see the eyeground through it, but could not induce her to say she had been benefited in the slightest by the operation, and yet it was her only eye, the other having been lost by some accident. Regarding the question of extraction of the lens in high myopia, I recall the case of a friend with a very high degree of myopia. He is a literary man with wide reputation, his eyes having served him for an enormous amount of work. He has often sought my advice as to whether or not it would be an advantage to have the lens extracted. We have discussed it well, but have never yet been able to summon courage sufficient to

have the operation done. I think when he reaches 60 years of age, if I do also, that I should advise him to have it done, but not before.

I have changed my views regarding the propriety of operating on patients with monocular cataract. Formerly, I thought it was subjecting them to unnecessary surgical interference, since they could not in any event enjoy binocular vision. My practice has changed, however, and for the reasons already mentioned by Dr. Jackson and Dr. de Schweinitz. In the first place, it improves the appearance of the patient by removing an unsightly white pupil. But what is of more importance it renders him less liable to accident on the street by restoring his field of sight on the side of the cataract. After its removal he will be able to see approaching objects, even though the eye may not be used for reading. Then, too, if the cataract is allowed to remain too long it becomes over-ripe and the probability of a smooth extraction is much diminished. I have, therefore, of late years advised the extraction of the cataract at some opportune time, if the eye were in a moderately healthy condition, even though vision were perfect on the other side.

DR. HANSELL—In regard to monocular cataract, as a rule I do not operate upon it. While I recognize the reasons for operation that have been given, I think there are some others that are equally powerful to influence one against interference. First, nearly all cases of monocular cataract have divergence in that eye. Second, the vision obtained does not in all cases compensate the patient for the expense, the annoyance, worry and risk of the operation. Again, the defect is not particularly noticeable, indeed, the mass of the laity do not recognize a cataract. A man was lately brought into my office, blind with cataract in one eye, and the family were not aware of the nature of the trouble. But there are circumstances which would warrant an operation, and I would do it in the cases in which the patients wanted it, but I would never advise it on the ground of securing better vision. I would not allow that consideration to influence me in deciding whether to operate or not. Another point, closely allied, is when to operate when in one eye the cataract is mature and in the other incipient. Dr. Jackson has said to operate as soon as the patient is no longer able to follow ordinary occupations. I agree perfectly, only I would put it in this way—postpone operation until the patient is deprived of the vision necessary to pursue his ordinary functions. I had this rule very strongly impressed on my mind by an experience. I extracted an over-ripe cataract from the eye of a patient 60 or 70 years of age, blind in that eye for thirty years, but with vision of about 20-30 in the other eye. After operation the vision was about 20-40—a little less than vision with the good eye. I considered the operation very successful, and I congratulated myself on restoring vision to an eye so long blind. This person recommended a friend with the same trouble to another physician, saying she had expected her vision to be improved but it was not. So I would say to operate on the eye first affected when the patient was deprived of useful vision in the second eye and not before.

Replying to Dr. de Schweinitz's question: "How long I would wait if I had two unripe cataracts?" I answer, that would depend upon the age of the patient and his financial condition—by that I mean his ability to live without the accurate use of his eyes; but I would not hesitate to extract a nuclear cataract in a patient over 60, whether or not the cortex was involved.

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## PHARYNGO-MYCOSIS.

BY HOMER M. THOMAS, A.M., M.D.
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The term, pharyngo-mycosis, signifies a fungoid condition of the pharynx. It is a parasitic affection of the mucous membrane of the mouth, and manifests itself in white patches of varying size. These are found to contain epithelial cells and parasitic forms of a vegetable nature, the distinctive ones being called leptothrix threads. The tonsillar crypts of healthy persons are sometimes more or less plugged by these vegetable masses, but it is only when the plugs are large enough to project slightly over the surface that they come under observation. Mycosis leptothrix occurs in two forms, diffused and circumscribed. In the diffuse form the entire tongue is coated with a shiny, milkwhite mass, which is frequently of sufficient density to obscure from view the villiform papillæ. Movement of the tongue and sense of taste are not lost, and there is no interference with the general health. In the circumscribed form, white glistening points appear, resembling those seen in follicular tonsillitis, except that the mucous membrane about them preserves its normal pink hue. The tonsils, pharyngeal wall and base of the tongue are apt to be invaded. White or yellowish gray spots, usually hard, are arranged in groups or singly, and form little excrescences on the normal mucous membrane. They adhere firmly to the surrounding parts, and reappear if removed by forceps. The leptothrix buccalis is found in carious teeth and in the accumulations known as tartar; a microscopic examination of the secretions of the mouth will almost always find them. You should look for these collections in the lymphatic tissue at the base of the tongue, in the faucial tonsils and in the adenoid tissue of the vault of the pharynx.

Some of these white spots resemble a mushroom in shape, others are like pointed cones. The mass seems to be in layers, the outer one being easily smoothed off, while there is a deeper and harder substratum in the shape of little plaques. These little excrescences have their attachments on the surface and in the openings and depressions of the tonsils, or on the palatine arch, often on the posterior pharyngeal wall, the side of the pharyngeal wall being sometimes involved. When occurring on the tongue they have their attachments in the region of the large papillæ. Sometimes this mass is cheesy and easily removed; sometimes tough and stringy, running deep into the follicles, being very tenacious and difficult to remove. B. Fränkel of Berlin, first pointed out in 1873 an abundance of leptothrix threads in these products, and since then this has been noted by many observers.

However numerous these small whitish projections may be, each spot is isolated and they never form a continuous mass. After the tonsil, the glandular subtissue at the base of the tongue is most frequently affected; and the growth here may be extensive, the masses attaining the size of a pea. In some cases, mycosis involves all parts of the pharynx.

*Pathology.*—The gross appearance of the lesion is

that of discrete white spots, which may be connected here and there by scanty thread-like filaments. The mucous membrane covering the tonsil is the part most frequently invaded. In so-called fetid bronchitis, the leptothrix threads have been found in the tracheal mucous membrane, in the characteristic fungoid plugs; they have also been found in the sputa of pulmonary gangrene. In fourteen cases reported by Heyring, the affection was confined to the tonsils in seven; in the remainder the base of the tongue was also affected. Six were men and eight were women. The ages varied from 12 to 62, the preponderance being between 28 and 35.

The characteristic feature of the circumscribed form is, that although it quickly redevelops, often in twenty-four hours, in the same spot from which it has been removed by instrumentation, its extension to other points is comparatively slow; that is, new foci of the diseases develop sluggishly, but when once established their tenacity of life is very great and radical methods are required to destroy them.

From diphtheria this disease may be differentiated by the persistent discrete arrangement of the exudate, the general absence of surrounding inflammation, and the masses being much harder than pseudo-membrane. The tongue may also be involved, which is rarely the case in diphtheria. The absence of the Klebs-Löffler bacillus would be convincing. Mycosis of the pharynx may be confounded with cheesy masses in the crypts of the tonsil, and follicular disease of the throat, but the ease with which the cheesy masses may be expressed from the crypts of the tonsils is in striking contrast to the fixation of the mycotic masses. The constant presence of inflammation in follicular disease, and an entire absence of inflammation in mycosis, are distinctive of the two diseases. The exudation of follicular tonsillitis is a yellowish white; it frequently becomes confluent, and upon the application of the salt of iron it is readily disintegrated and may be largely removed.

*Microscopic Appearance.*—Microscopic examination shows a general mass of epithelial cells surrounded by an irregular collection of fungoid spores, arranged in link-like processes, their ends being rounded or club-shaped. They vary in length and some curl up at the ends into hair-like filaments; others are like rods, colorless, with sharp dark borders, the centers seeming to be full of granular matter. Besides these spores there are round or oval, highly reproductive bodies with dark borders, arranged in colonies or placed separately between the branch spores. Staining with methyl-blue brings out colored and uncolored portions on the stem spores. Jacobson succeeded in making a pure culture of these organisms. Leptothrix has the peculiarity of dissolving the chalk deposits of the salivary ducts and glands. Miller describes the microscopic appearance as a dirty yellowish deposit varying in size from the head of a pin to a pea, consisting of numerous bacterial forms and extending deep into the lacunæ of the tonsil.

*Etiology.*—The etiology of pharyngo-mycosis is very uncertain. Mouth breathing has been suggested as the cause. Tonsillar hypertrophy is a predisposing cause. It has been noticed as a sequel to rheumatic amygdalitis. Some observers have mentioned damp localities as favorable to the growth of this fungus. Catarrhal inflammation is a predisposing cause. It is more frequent in females than in males. Tobacco smoking is thought by some to have a preventive action. The resemblance of the bacilli to several forms found in water, especially the water from marshes, has suggested the possibility of such a source of infection. In several instances it has been observed to follow or excite affections of the pharynx. It occurs most frequently in women and children who suffer from enlarged tonsils and are disposed to chronic pharyngitis. Some writers claim that a condition of malnutrition, with an impaired state of health, may be considered as a provoking cause; others claim a causative relation between disturbances of digestion and mycosis. W. C. Glasgon believes that some peculiar condition of the mucous membrane is a necessary factor in the development of mycosis, and that it only exists when the membrane presents a soil which favors its growth and development. The disease is not directly transmissible and is not contagious.

*Symptoms.*—The subjective symptoms of pharyngo-mycosis are variable; sometimes there exists a sensation of tickling and dryness in the throat, confined to the pharynx. Again, there may be a feeling as if the throat had a band drawn around it, giving rise to a slight choking or feeling of pressure; slight pain on swallowing, the feeling of the presence of a foreign body, attended with an irritation which causes a desire to clear the throat and to cough. In some cases these symptoms are greatly exaggerated, with depression, considerable fever and loss of appetite. The disease may exist without any symptoms being apparent to the patient, if not a vocalist. Mycosis in the throat of a vocalist produces great dryness and irritability of the fauces after a short vocal use of the throat. The voice is rather lowered in tone and inclined to be husky.

The objective symptoms are spots upon the pharyngeal wall, and often the circumvallate papillæ of the tongue are invaded. The color of the spots may be white, cream or yellow.

*Treatment.*—Dr. Kitchen has suggested hyposulphate of sodium as a means of treatment, especially if allowed to soak in well, and applied repeatedly with a swab. Peroxid of hydrogen has also been recommended. Semon claims to have cured a case with chlorate of potash gargle, and troches of tannic acid; Seiffert, with iodin and a gargle of borax, but doubt has been expressed as to the correctness of the diagnosis. Alum and sulphur have been found useless; silver nitrate resulted well in two cases that were especially tolerant to its use, but a relapse occurred later. Jacobson recommends a bichlorid gargle 1-2000. Töplitz found ferric acid useless, and others have had a similar experience with other iron salts. Carbolic acid has produced negative results. All of these agents have proved unreliable, and nearly all of them useless; fused chromic acid has given better results. At best, superficial applications like gargles can only affect the top of the growth, while its base remains firmly bedded in the tonsillar crypt, and the forcible rubbing on of solutions may abrade the epithelium and so permit the spread of the disease. Glasgon advocates the destruction of the organism with the cautery, or forcible extraction with the forceps where the growth has assumed a horny thread-like character. In some cases he advises scraping of the spots with a sharp curette and applying trichloracetic or chromic acid freely to the surface. He has found the application of boracic acid in saturated solution of value,

in preventing the spread of the disease. The treatment is always tedious, with a tendency to return until all evidences of the disease have been eradicated. The most successful and certain treatment is the use of the thermo- or galvano-cautery. The bacillus frequently penetrates the tissues to the depth of one or two millimeters, hence the cauterization must be deep in order to destroy the germ. The bacillus thrives best in an acid medium. If the negative pole is used for cauterization, with a large positive electrode, there is a deeper action upon the tonsil and the growth is surrounded by alkalin fluids. The point of the galvano-cautery should be thrust into the root of the growth.

I am under obligations to Dr. F. D. Owsley of this city, for translations from the German, of Schech. I am also indebted to the writings of B. Fränkel, Rice, Vanderpoel, Newcomb, Hemenway, Glasgon and others.

The following case of pharyngo-mycosis was kindly referred to me by Dr. Fränkel of Berlin:

The history of the case as given by the patient, Mrs. C. B., is that during August, 1892, she suffered from a slight irritation in the pharynx. There were white spots on the tonsils, which disappeared after a few days, but returned within a couple of weeks. The physician consulted called the trouble a mushroom growth, and said it would require two or three treatments a week for some three months to effect a cure. The treatment consisted of a forcible removal of the exudate by means of forceps. This method of treatment was attended with severe pain and proved unsatisfactory. The patient becoming discouraged consulted Dr. Fränkel of the Berlin University, in November. At that time he found spots covering the tonsils and extending to the root of the tongue. His treatment consisted of swabbing the throat two or three times a week with a 5 per cent. solution of carbolic acid, and he recommended that the throat be gargled two or three times a day with pure brandy. Under this treatment the throat seemed to grow somewhat better, but still the disease was not wholly eradicated.

Having been called to this city, Mrs. B. came under my care Jan. 4, 1893, at which time the pharyngo-mycotic deposit was very extensive upon the posterior pillars of the fauces and invaded the root of the tongue, almost completely covering it, and there were extensive deposits upon the tonsillar substance.

After having confirmed the diagnosis as made by Dr. Fränkel, through microscopic examination of the deposit, I advised treatment to consist of thorough applications of the galvano-cautery. The electrode selected was one made for me in Vienna, and consisted of a very fine elongated platinum point which enabled me to introduce it directly into each one of the crypts of the tonsil affected by the disease, and also to eradicate the punctated growths at the base of the tongue. At first only three or four punctures were made at a treatment, the treatments occurring three times a week. As the patient grew more tolerant of the irritation following the use of the galvano-cautery, the number of punctures per treatment was increased, until I frequently applied the cautery to eight or ten of the mycotic masses at each treatment. The effect secured has been satisfactory to the extent that the disease has not reappeared at any of the foci cauterized.

My experience in these cases leads me to believe that the galvano-cautery treatment of pharyngo-mycosis is the nearest a specific in the management of this disease of anything we have.

Marshall Field Building, Chicago, Ill.

**A Case of Triplets, all Males.**—Mrs. Albert Stunzi, of East Eighteenth Street, New York City, became the happy mother of triplets, all boys, in the middle of December last. The mother and her sons are getting along unusually well, and the presents of cash baby clothes that showered down on the suddenly increased family were a surprise that did no harm to the prospects of any concerned. Some gifts came to hand from points as far to the westward as Omaha and Denver.

## PATHOLOGICAL CONDITIONS FOLLOWING PIERCING OF THE LOBULES OF THE EAR.

Read in the Section on Otology, Pan-American Medical Congress, Washington, Sept. 6, 1893.

BY MAX THORNER, A.M., M.D.

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The custom of piercing the lobules of the ear dates from the remotest historical antiquity, being first mentioned in the Book of Genesis. It was practiced by the people of the Orient and by those of the West, and was transmitted from the races of classic antiquity, through the Middle Ages, down to our present times. Ear-rings were held among certain nations in high repute as talismans or amulets. They were, and I believe are still, superstitiously valued as remedies for eye affections. But their principal use was at all times, and certainly is now, that of ornaments, to be worn generally by women. And thus it happens that mothers, who would otherwise protect their little ones from every harm and pain, will not shrink from subjecting them to an unnecessary, inexcusable, and painful procedure, only to adorn them with the coveted jewel. This explains why such a barbaric custom as that of piercing the ears could have survived to our present times.

It is, however, barbaric, not only because of its origin, nor on account of the crude methods by which it is practiced; but more so for the reason that not rarely more or less troublesome, and even fatal consequences have been observed after this procedure. It is my pleasure to report to you to-day a number of such sequelæ of piercing the lobes, some of which seemed to me to be of more than ordinary interest, although there are scattered in literature a goodly number of interesting cases. Before reporting my own, it may be opportune to mention a few of the observations made by others.

Hufeland saw a child die of trismus following piercing of the lobule of the ear.[1] Severe inflammation of the lobe, erysipelas of the ear, large granulations around the wound, cutting of the ring through the lobule, and hypertrophic thick scars are some of the possible sequelæ mentioned by Dieffenbach.[2] Fibroids (keloids) have been observed by many authors and are mentioned by Knapp, Agnew, Turnbull, Finley, Bürkner, Schwartze, Politzer, Bacon and others. They occur up to the size of hen's eggs, and are said to be more common among the colored than the white race. Politzer says[3] they are benign, no recurrence taking place after total extirpation. He refers, however, to the case of Agnew,[4] in which a tumor originating in a traumatic scar returned again and again. According to some observers, recurrence of these tumors is not at all uncommon. Knapp has called special attention to the fact that they are liable to recur, and that by frequent recurrence they may become malignant.[5] And in all cases of tumors of the auricle reported in this paper, recurrence has taken place several times. Sexton[6]

1 Cited from Dieffenbach, Die operative Chirurgie. Vol. II, p. 78. 1848.
2 J. F. Dieffenbach. op. cit.
3 Lehrb. d. Ohrenheilkunde. 1893. p. 449.
4 Trans. Amer. Otol. Soc., 1882. p. 720.
5 Cited by E. B. Dench, in Burnett's System of Diseases of the Ear, Nose and Throat. Philadelphia, 1893. Vol. 1, p. 157.
6 The Ear and its Diseases. N. Y., 1888, p. 112.

speaks of a cleft lobule from ear-rings, and saw even a portion of the lobule slough off. Kirchner[7] says that the lobule is not infrequently the seat of an eczema, originating by preference in the pierced holes. Altschul has reported death from gangrene, following piercing of the lobes in a girl of 9 months;[8] and erysipelas, sometimes fatal, is mentioned recently by Haug[9] as being occasionally caused by the reprehensible practice of piercing the lobule.

It would be easy to multiply the cases, but these will be sufficient to show that there are abundant observations on record to make one reflect, why the voices of physicians, or at least of otologists, are not raised against this "truly barbarous custom," as Roosa calls it. The following cases have come under my observation:

ERYSIPELAS OF THE AURICLE AND FACE.

*Case 1.*—The lobule was pierced in a child 2 years old, and this was followed by a severe attack of erysipelas, involving the whole auricle, auditory canal and part of the neck.

*Case 2.*—A lady, 20 years of age, who had not worn ear-rings for some time was, on attempting to do so again, obliged to use some force in placing them. Pain, redness and swelling soon developed in one ear, and the erysipelatous inflammation also involved face and scalp.

*Case 3.*—Also in an adult, and very similar to Case 2. In this case the general symptoms were very severe, and the erysipelas, after having spread over the face and neck, invaded the pharynx. The patient recovered.

DEFORMITIES.

Two cases of cleft lobule were seen, caused by the ear-rings cutting through. In the one case, both lobules were torn. The clefts were readily repaired by the operation advocated by Knapp,[10] by paring the edges and stitching the little flap left on the posterior lip over the corresponding portion of the anterior lip, thus avoiding a notch in the lobule. The result of the operation was good. The other case of cleft lobe was peculiar. It was that of a middle-aged woman, in whom the ear-ring had torn through the left lobule about ten years ago. Two years later she got tired of wearing but one ear-ring, and she had the left lobule again pierced, close to the old aperture. In the course of time this ring had also torn through, parallel to the old slit, and the woman had now a lobule consisting of three pendants. The narrow, central strip was removed, and the edges of the remaining parts united in the above described manner. The cosmetic effect was good.

One case of enlargement of the opening made for ear-rings, presented a peculiar and even ridiculous appearance. The hole on one side had gradually enlarged, from the weight of the ring, to the size of a lead pencil; and repair was desired by the patient, a young lady of 19 years, for cosmetic purposes. The edges were pared with a cataract knife, united by one suture, and healed readily. (A similar case is described by Roosa.[11])

ECZEMA OF THE AURICLE.

This has been observed in a number of cases to be caused by the wearing of ear-rings, especially when they had accidentally caused small tears of the cutis, and also after forcible placing of ear-rings, when the opening had been closed for some time. It was generally the acute form which was seen, causing swelling, excoriation, formation of unsightly crusts, and bleeding often upon the slightest touch. This form is, as a rule, very painful. Removal of the cause and treatment with ointments (for instance the ung. diachylon) were sufficient to produce a speedy cure. In two cases the eczema had reached the chronic stage; in one, involving the larger part of the auricle, and more especially the furrow along the insertion of the auricle. These cases were more obstinate, but yielded also finally to treatment.

TUMORS OF THE AURICLE.

*Case 1. Fibroma (Fibro-chondroma) of Auricle.*—The patient, referred to me in August, 1887, by Dr. Wright, was an unmarried lady, 32 years of age; white. Had been troubled as a child with painful swellings of both lobules, which caused her to discontinue wearing ear-rings at the age of 17. At the age of 22 she noticed that the old swelling in the right lobule, which had been pierced higher than is the custom, and very close to the antitragus, began to grow, until it had reached the size of a small cherry. Two years thereafter it was removed, but showed signs of recurrence within a year. Three years ago, and five years after the first operation, it was again removed, but began soon to reappear, until it had reached the size of a small chestnut, involving the whole lobus. Removal was effected by a V-shaped excision, and the edges brought together by sutures. The tumor had not returned two years after the operation, the last time I saw the patient.

The microscope showed within a dense connective tissue formation, the structural elements of cartilage sparingly interspersed. A case of fibro-chondroma of this region has also been reported by Strawbridge.[12] The appearance of cartilage in a tumor of the lobule, finds its explanation in the fact that the lobule is not entirely free of cartilage. There is, as W. His[13] has shown, an unciform strip of cartilage below the antitragus, called by him *lingua auriculæ*, which is the cartilaginous support of the lobule of the auricle.

FIBROMA OF THE AURICLE.

For the history of the following interesting case and the specimen I herewith present to you, I am indebted to my friend, Dr. O. Landman of Toledo, Ohio:

*Case 2.*—Mrs. C. E. J.; white; age 35. When 15 years old, her ear-rings were caught on a pillow, and both forcibly torn out. The wound healed, but later on a "lump began to grow" on both lobules. Two years afterwards both lobules were partially amputated. The left tumor has never returned. The tumor in the right ear returned six times, and reached an operable size about every three years. There were six operations after the first. Two years ago Dr. Landman saw the case for the first time, when the tumor had reached the size of an English walnut, involving the larger part of the auricle. He operated by amputating the entire auricle. About eight weeks ago the lady was seen again. There were at that time no signs of recurrence. The microscopic examination showed the tumor to be a characteristic fibroma, containing possibly a little more yellow elastic tissue than is usual in this kind of tumors, but which might be expected from the structures involved.

KELOID OF THE AURICLE AND FACE.

*Case 3.*—Miss E. P. H. of Indiana; white; 35 years old; was seen one year ago. When 18 years old a small nodule developed in the right lobule, close to the puncture. This began to grow, was painful, and was excised. Within the following seventeen years the recurrence of this tumor was the cause of untold misery for the sensitive woman. In the course of time she was operated upon six times with the knife, and caustics of every description and in untold quantities had again and again been used. Electrolysis and hypodermic medication had been tried in vain. The pain produced by these different therapeutic agencies,

[7] Schwartze's Handb. d. Chrenheilk. 1893. Vol. II, p. 18.
[8] Ibid.
[9] Arch. f. Chrenhlk. Bd. 35, p. 142.
[10] Archiv. of Ophth. and Otol., Vol. III, No. 1.
[11] A Practical Treatise on the Diseases of the Ear. New York. 7th Ed. 1891. p. 104.
[12] Trans. of the Amer. Otolog. Soc. 1875.
[13] Arch. f. Anat. u. Physiol. 1889. V. and VI.

especially the caustics, and the frequently unbearable pain within the growth, had undermined her health. When I saw her, a little over one year ago, there was a solid sessile tumor, the size of about a silver quarter, extending from the region below the tragus into the cheek. The lobule and lower posterior half of the auricle were gone, and from the edge of the rest of the auricle a dense and unyielding cicatricial tissue extended into the integument below and behind the ear. The tumor was flat, about one-sixteenth of an inch elevated above the surrounding skin, ordinarily pale, and not sensitive to the touch. At the time of menstruation it was usually congested, and slightly more elevated, and caused, especially at such times, but occasionally also during the intervening period, the most intense and lancinating pain.

The tumor was removed by an elliptical incision in healthy tissues, care being taken to lift it with a portion of the subcutaneous adipose tissue from its location. After severing, by deep incisions, some of the cicatricial bands behind and below the tumor, I was enabled to close the wound by sutures. Primary union. There remained a thin linear scar, the pain disappeared within a few days, and there have been no signs of recurrence as yet, one year after the operation. On former occasions the tumor showed signs of reappearance within six months.

The microscopic examination, made by Prof. Kramer of the Cincinnati College of Medicine and Surgery, showed the removed tumor to be a true keloid. The epidermis was atrophied, and hairs, hair-follicles, and glands were entirely absent. The Malpighian layer was distinctly preserved, but there were only scanty traces of papillæ. Immediately below them, and arranged in layers parallel to the surface there was a dense mass of fibrous tissue in which here and there blood vessels, some compressed, appeared. Among the bundles of fibrous tissue, occasional elastic fibers were noticed, and also, frequently, groups of spindle cells. Below this was a looser connective tissue, with many cellular elements, and a gradual merging into adipose tissue. It is too early as yet to say whether the last removal will not be followed by a recurrence.

It is true that most authors insist upon the possibility, and even probability of a return of these growths after operations. But no treatment has as yet been devised that will actually give better results; while Erichsen,[14] though admitting their liability to return after excision, calls this their only treatment. And in this case, the almost intolerable sufferings of the patient, whose best years had been sacrificed in the battle with this baneful disfiguration, compelled me to do something that gave her at least a slight chance of a permanent cure.

These cases do not demonstrate anything new, but having occurred under my own observation lead me to believe that they are still more frequent than we usually think. And while in most cases no serious consequences result from the folly of piercing the ear lobes, yet there occur, from time to time, cases where a life is at stake, or where the enjoyment of life is seriously interfered with. It is time that this relic of barbarism ought to be relegated where it belongs,—to the by-gone follies of superstition and fashion. And the day is, I hope, not far distant, when it will be considered an evidence of brutality to have a tender and unprotected child subjected to such an unnecessary and mutilating procedure.

141 Garfield Place.

[14] The Science and Art of Surgery, Vol. II, p. 314.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

## THERAPEUTIC INDICATIONS OF RHEUMATIC PATHOLOGY.

BY THOS. O. SUMMERS, M.A., M.D., F.Sc.S. LOND., D.D.S.
WAUKESHA, WIS.

Notwithstanding the fact that the literature of medicine is teeming with disquisitions and discussions upon the subject of rheumatism, there appears to be nothing within the whole range of pathologic investigation upon which the profession to-day stands so greatly at variance as upon this, perhaps the most cosmopolitan "of all the ills that flesh is heir to." Theory after theory has been propounded and exploded; remedy after remedy proposed and rejected until the whole "Pharmacopœia" has been exhausted, and the shelves of the apothecary crowded to overflowing with charlatan nostrums and proprietary preparations sufficient to float a fleet, in the apparently vain effort to find relief from this universal and intractable malady.

While, therefore, I do not propose to add anything to the fund of actual information on the pathologic principles upon which rheumatism is founded, I do propose to bring out and apply those principles in such a manner as to establish the true line of therapeutic action in its treatment.

It is very often the case that, in those diseases which are most common, the treatment is so generally ineffectual on account of the fact that our therapeutic leaders overlook the very simple pathologic principles which govern them, in their vain search for some occult factor in the problem which in reality does not exist. Most undoubtedly is this true in regard to the disease under consideration, as I hope I shall be able to demonstrate.

A great deal of the nebulosity which hangs about the subject of rheumatism arises from its peculiar relation to those specific disorders with which it has been classified by pathologists as *cousin-german*—such as syphilis, scrofula, tuberculosis *et id omne genus*—known to ultimate pathologic analysis as *leucocythemic* in origin.

I do not know that I could introduce this discussion in a more striking manner than by the relation of a little incident which occurred to me some eighteen years ago, while an associate editor of the *Nashville Journal of Medicine and Surgery*. Being the youngest of the editorial staff, the "*make-up*" of the *Journal* was left to my supervision. Our old foreman, "Father" Brown, as we familiarly called him, was a regular copy-*fiend*. He was never satisfied without a lot of extra "*live matter*" from which to select in "making up." One day I entered the composing room and was greeted by the old man with a regular tirade, on account of not having just the amount of matter necessary to fill out a little space, and he wanted me to prepare it at once. I snatched up some galley proof paper and began to write just what came first into my head. I had just left my microscope, upon the stage of which was resting some preparations of corpuscles from pus, from rheumatism and from normal blood which I had been comparing. So in the little "take" which I handed over to the old foreman I simply announced the conclusion at which I had arrived only a few moments before, that the cause of pain in rheumatism was undoubtedly due to the migration of the white blood corpuscle which, continuing to live out-

side the vessels, not only appropriated nutritious material to its own use at the expense of the normal tissues of the body, but became bloated with riotous living, swelled up inordinately and impinged inconveniently upon space belonging to the delicate nerve filaments distributed to contiguous structures. It was, indeed, a new conclusion to me, but I was no less surprised than pleased some time thereafter to find the little item copied by the *London Lancet* with due credit, and with a tacit, but yet apparent indorsement, and from this it went the whole rounds of the foreign and American medical press.

I may say that *I have since then found no reason to contradict or modify the conclusion then so casually and cursorily made.* On the contrary, starting with this, I carried my investigation and my reasoning farther in the same direction and was astonished to find what a wonderful field of fact was opened up before me. I saw at a glance the many and wonderful pathologic conditions capable of being brought about by this migrated corpuscle—this "*Wandering Jew*" of the organism. Protean in relation as in form, and as a vital physiologic unit capable of independent life, a most dangerous element in all pathology, involving assimilation of pabulum, and nutrition of structure.

At the risk of becoming trite in the eyes of those who are continually occupied with pathologic investigations and are familiar with pathologic technology, I shall review in a cursory manner the structural morphology and the functional relationship of this *white blood corpuscle* or *leucocyte*, from its first active appearance in the blood, directing and controlling as it were the distribution of nutrition from within the prison walls of the blood vessels, to its wanton wassail while carousing over the spoils of the organism after escape from its forced vascular confinement. In this connection it may not be uninteresting, even to the most of the JOURNAL readers accustomed to the microscopic views of the amœboid movement, to observe the relationship which exists between the corpuscle, as it floats in the plasma, and the corpuscle freed from its physiologic restraint. Unlike its red companion it has a vitality of its own and depends not for its existence upon a fixed and necessary environment. Take the red corpuscle from its home in the plasma of the blood in which it purls along content with its surroundings, and doing quietly and submissively the behest of the organism in carrying and delivering its freight of vivifying air. Not only is it content with its environment, but it can exist under no other conditions, and the moment it is removed from its normal surroundings it sinks at once into retrograde metamorphosis and final death. Not so with the white corpuscle. From the first moment of its physiologic existence it engages in an endless struggle for freedom. In its course through the organism it tries every osmotic crevice in the walls of the blood vessels, taking every shape that it may deem better adapted to its escape from prison. On its exit from the "pent-up Utica" of its tubular jail, it sets up housekeeping on its own account, and its extravascular or pathologic life is far more active than its physiologic existence, for it really seems to begin life in earnest when freed from the restraint of physiologic law. So strikingly is this manifested that pathologists have often been led to wonder why an element so necessary to physiologic integrity should show its greatest activity under pathologic conditions—a question which the limits of this paper do not permit me to discuss in this connection.

There is, however, a point which requires our attention just here, and that is that a low nutritive condition of the blood is peculiarly favorable to the migration of the white corpuscle. Where the plasma is thick and charged with nutritive elements there is little room left in the osmotic spaces for the escape of the corpuscle, and besides it is kept in a state of constant activity in handling the nutritive freight of the organism, if we may be allowed to carry out the metaphor, to find time to look for avenues of escape, for in the physical as well as in the moral world,

"Satan finds some mischief still
For idle hands to do,"

and the greater number of pathologic conditions arise from inactivity of function, rather than from lesion of structure.

This relation of the poverty of the blood to the increased migratory tendency of the white corpuscle will suggest at once to the thinking mind the therapeutic indication in the pathologic premises. It will be clear that anything that favors osmosis, that excites absorption, thus occupying the avenues of escape with nutritive material, will not only arrest migration but prevent the preying of the corpuscles which have already escaped, upon surrounding structures. Foremost among such agents stands iodid of potassium, which seems to have a more marked effect, both in regulating the physiologic activity of the white corpuscle and in protecting the tissues from its ravages when once it has escaped and become ensconced among them. It is, then, not in the least surprising to find that in all those diseases which have been referred to as *cousin-german* to rheumatism, marked as they are by an increase of the white blood corpuscles in proportion to the red, iodid of potassium has even empirically become a standard remedy. Anything, too, which excites secretion, will also tend to check this migration and neutralize the pathologic effect of the corpuscle. And above all other therapeutic agents which have been proved effectual in this relation calomel rears its head; whatever malediction and abuse have been hurled at this grand old remedy, like Banquo's ghost, "it will not down," and a sad day it will be for medicine when, through the fashionable tendencies of the times, the profession becomes too cowardly to use a remedy that the experience of ages has tested and indorsed.

Upon the basis of what has been said, therefore, I offer my own method of treatment in rheumatism, both chronic and acute, and though the remedies may seem old fashioned, the proportion used and the manner of their combination prove their practical value and, substantiated as they are by the pathologic indications, I always administer them with confidence.

At night, before retiring, I order a hot mustard foot bath and the following prescription:

℞. Pulv. Dov . . . . . gr. xv.
Hyd. chlor. mit . . . . . gr. x.
M. et. ft. capsul. No. ij.
S. Take both before retiring.

I always direct these capsules to be taken with a solution of bicarbonate of soda ʒj, to water ʒvj.

Go at once to bed and *stay* there. In the morning, if there is no action on the bowels, give a bottle of solution of citrate magnesia freshly prepared. I then order the following:

℞. Potass. iodid . . . . . ℥ss.
Vini colch. rad . . . . . } āā
Fl. ext. sarsæ . . . . . } ℥ij.
Tinct. cinchon. comp . . . . . }
Mix.
S. Dessertspoonful in half a glass of water one hour after each meal.

Sometimes this dose must be varied on account of idiosyncrasy—this the physician must decide in each particular case.

This treatment usually gives relief and is founded upon a true and solid pathology.

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## OBSTRUCTION OF THE BOWELS.

Read before the Medical and Chirurgical Faculty of Medicine at the Semi-Annual Meeting held at Annapolis, Nov. 23, 1893.

BY EDWARD ANDERSON, M.D.
ROCKVILLE, MD.

I have had a good many cases of this trouble, as all of you who have been in practice for a number of years must have had. On being summoned to the bedside of a patient suffering from obstruction of the bowels there are three questions we should ask: What has the patient been eating? What doing? And whether he or she is of a constipated habit?

Although I have never seen complete obstruction caused by scybala, I have seen it sufficiently so to have caused death had not timely remedies been employed. I will mention a case in point later on.

I have always been able after a few hours' attendance to discriminate between those cases which required surgical interference and those which did not. If complete obstruction occurs suddenly, accompanied by pain sufficiently intense to require the administration of large doses of opium oft repeated, enemas having failed, surgical aid should at once be procured; but if the pain is not intense and we find that hard substances upon which the intestinal juices are unable to act have been swallowed, we can afford to wait, and try other means. Any smooth substance small enough to pass through the esophagus, will be sufficiently so to pass through the intestinal canal, and any number of small bodies collected together in the bowel can be dislodged without resorting to laparotomy. If we know that a large solid substance has been swallowed the best plan to pursue is to allow no purgatives to be given, and to keep the patient as much as possible on solid food until it passes. Large enemata should first be employed in every case of obstruction, particularly so when we have reason to believe that masses of small bodies cause the difficulty; and in suitable cases small doses of calomel repeated at short intervals should be used at the same time. If we can not do for our patients the very best that can be done, we ought to seek the aid of some one who can. This has always been my motto, but our best endeavors are sometimes thwarted, as the two following cases will show: on August 25, 1885, I was called to see a mulatto woman in good circumstances, about 45 years old who the messenger said was suffering from severe cramps. I found her with intense pain in the umbilical region, severe enough to require the hypodermic injection of a fourth grain of morphia every four hours. I threw a large amount of warm water into the bowel which removed some very hard fecal matter, but after that nothing could be brought away; even milk came out of the bowel as white as when thrown in. I told the family at once that an operation would be necessary; this was unwelcome news as such news always is, especially to the ignorant, and of course the family wanted a consultation. On the second day a consultant was called in who threw out the hope that the recovery might take place without an operation; he proposed that we should give 2 grains of calomel every four hours in addition to the hypodermic of morphia and the rectal injection of milk with which I was sustaining her. Not being able to persuade the husband and children to call in a surgeon, I abandoned the case on the fourth day. I understood from those who were present that the treatment that I inaugurated was kept up until the patient's death, which occurred on the eighteenth day. Although vomiting was incessant from the beginning, it did not become stercoraceous until near the close of life. This woman's alarming symptoms came on immediately after drawing water from a well with a rope, hand over hand, without even a wheel to assist her. What condition the bowels were in I do not know, as no autopsy was held.

A little over two years ago I was called to see a negro woman about 50 years of age who was suffering from intolerable pain in the umbilical region, accompanied by incessant vomiting, which became stercoraceous on the first day. I gave her a hypodermic of one-fourth of a grain of morphia every four hours, and at the same time threw large quantities of warm water into the bowel with the effect of producing one action only, without checking the vomiting in the least. A half gallon of water that I injected was retained until the next day.

When obstruction of the bowel takes place, peristaltic action is lessened, even below the obstruction which favors rectal alimentation. I tried to procure the services of a surgeon in this case but failed to do so. On the third day I succeeded in obtaining the services of a gynecologist, but after he came I could not prevail upon him to open the abdomen, though laparotomy was of almost daily occurrence with him; I had seen him perform supra-vaginal hysterectomy for a large fibroid and do it as skilfully as any one could, yet he hesitated where the bowel was concerned, and told me to go on with my treatment until the next day, when he would come again and operate, if no change for the better had taken place. When he came again she was too weak to be operated upon, it being the fourth day of her illness, and she died at noon that day. Had I known that I could not have this woman operated upon I would have opened her abdomen myself, though I had never performed laparotomy. On opening the abdomen after death, a stone was seen just below the umbilicus, occupying the most constricted part of the ileum and almost as plainly visible through the transparent bowel as it is in my open hand. The first case of obstruction I was ever called to attend was that of a child 10 years old, the daughter of a farmer. The parents were intelligent people and had diagnosed the case properly before I arrived. They said the child had been eating cherries and they supposed had swallowed the stones, which had collected in the bowel. Three tablespoonfuls of castor oil had been given without effect. I gave a teaspoonful of paregoric to relieve the pain and used the syringe every hour during the night, with the result of bringing away a half pint of cherry stones and completely relieving the child.

An old lady, a patient whose bowels had been obstructed for a week and who could not stand the use of enemas was put upon one-sixth of a grain of calomel

every two hours for two days when the obstructing mass was removed which proved to be tomato seed. The pain she had suffered, the subsequent laxness of the bowels and a slight constitutional effect of the mercury caused her death a few days thereafter. I saw a case which was in charge of another physician, where a boy of 12 had his bowels obstructed during the Christmas holidays. In this case 2 grains of calomel were given every four hours, together with the employment of injections for three days without relieving the child, when a surgeon was called in to operate. He did not operate, however, but injected senna tea through a long tube at intervals for twelve hours when the obstruction was removed, which proved to be nuts partly masticated and held in position by the gum of raisins, of which he had also eaten freely. Had not the calomel been used in this case, I do not believe that enemas would have succeeded, for the gum from the raisins came away in flakes showing that it had formed a cast of the bowel. On August 17, 1889, I was called to see a lady of 50, on account of pain in and distension of the abdomen. I found her with a temperature of 102 degrees F., very much distended and pain sufficiently severe to require a dose of morphia. I knew she was of a constipated habit, and also that she had been living largely on constipating food, milk, and sweet potatoes; although there was slight diarrhea present I felt confident that there was almost complete obstruction from impacted fecal matter. I ordered large warm water enemas and began the use of purgatives. I gave 12 grains of blue mass at night, and a teaspoonful of Rochelle salts the next morning, and repeated the dose of salts every four hours from August 18 to September 4, with temporary relief, but on September 26 she was as bad as ever; when I commenced the same treatment again, and kept it up until October 28, with the result of bringing away a large amount of hardened matter which had probably been accumulating for years. This lady has not been sick since. We rarely meet with a case so pronounced as this, but it is wonderful how many there are which resemble it, particularly in females beyond middle life who lead sedentary lives.

The following case was the most interesting that ever came under my care: On Nov. 14, 1887, I was sent for to see a little girl on account of threatened convulsions; the child was 16 months old and belonged to a highly neurotic family. She was the most precocious child I ever saw, being able to run about the streets and speak as plainly as most children of 3 years. I found her with the left side of the face twitching violently. The mother said the child's throat was sore and she thought that she had diphtheria, but an examination revealed nothing indicating it. According to previous instructions, if a case of convulsions should occur the parents had given 5 grains of bromid of potash, which I told them to continue at intervals of four hours until I came again. I went back some hours later and learned that the child had had several general convulsions, and she showed by the way she acted that she had pain in the abdomen. I gave a full dose of calomel and left orders for the bromid to be continued as before. The calomel acted freely, and brought away a large stool, with several pieces of apple core in it, but this did not mend matters for a severe spasm came on while the bowels were moving. The bromid was kept up for four days but did not stop the convulsions, four or five occurring daily. The father thought the bromid aggravated the case, as a convulsion came on after each dose, so I substituted 2 drops of tincture of belladonna, after which no more convulsions occurred, but partial paralysis of the left side was noticed, the temperature being 103 degrees F., with exhaustion sufficient to require a teaspoonful of whisky every four hours. At this stage of the case a consultant was called who had had forty years' experience in Washington, and for a great part of the time was physician to a large foundling asylum. He came on three successive days, and each time said if the child was living in the morning he would be back—showing he had no idea of its recovery. The bowels never moved except when a purgative was given. I will not weary you with the details in this case; suffice it to say that the child hovered between life and death; that it taxed my skill, and the patience of all its relatives to the utmost until the first of January, 1888, when a slight but perceptible improvement took place. On the tenth day of February of the same year it passed a china button, the largest size that is made. Although she could neither walk, talk, chew or swallow, unless liquids were poured down her throat, the child continued to improve, and at the end of nine months was able to walk—but the power of speech was never restored. Twelve months after the beginning of this trouble the mother in great glee sent me word that her child had bitten a piece out of a cake and swallowed it; improvements with many setbacks went on from Jan. 1, 1888, to Jan. 1, 1889, when a weight of thirty pounds was attained. I neglected to mention that when this patient first gained strength enough to be weighed, her weight was only twelve pounds. On February 5, she was attacked with pneumonia and died on the eleventh. Though I was in the house several times a day sometimes remaining an hour, I never heard her cough, or the slightest sound like it, the reflexes having been destroyed. There were a great many points of interest in this case: 1, the obscure nature; 2, the failure of bromid of potash to check or stop the convulsions, while at the same time protecting the brain to the extent of saving life; 3, the great length of time the obstructing body remained in the bowel; 4, the family history: The maternal great aunt became a deaf mute from a fall when 3 years old; she is now 70 and still deaf and dumb. The maternal grandmother told me seven of her near relatives had died of tetanus, some being members of her immediate family. Although we believe tetanus to be a germ disease, like all other germ diseases, it has a predilection for certain families; 5, absence of cough during pneumonia, which ended in death.

I have seen in consultation some cases of complete and some of partial obstruction caused by appendicitis, but the diagnosis was made too late to be of avail. I merely mention those cases which came under my observation, which were relieved, or ought to have been relieved.

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THE HEIRS of Senator Jacob Moleschott, the famous explorer, teacher and physician, have given his valuable library, containing over 40,000 volumes of medical, philosophical and scientific works, to the Academy of Turin, where the dead man began his labors.

# HYSTERECTOMY BY THE PRATT METHOD—THE SURGICAL ASPECTS OF HYDROCEPHALUS.—AN OBSCURE CASE OF HEMATURIA.—OPERATION FOR STRICTURE OF THE RECTUM.[1]

BY EMORY LANPHEAR, M.D., Ph.D.

PROFESSOR OF OPERATIVE SURGERY AND CLINICAL SURGERY IN THE KANSAS CITY MEDICAL COLLEGE.

Mrs. B., a patient of Dr. R. A. Brogan, Osage Mission, Kan., who has been sent to the Hospital for operative treatment. She is 54 years of age, married at the age of 20, never pregnant, always in good health, but naturally thin. At about the age of 47 she ceased menstruating and passed through the climacteric without difficulty. Some two or three years subsequently she noticed a slight heaviness in the pelvis, and consulted her physician, who told her that she had some form of tumor growing in the womb. A little more than four years ago she began to have hemorrhages at irregular intervals. These attacks of bleeding have increased in frequency and intensity, until, as you see, she is exsanguinated and almost a skeleton. Examination of the case upon her admission to the Hospital showed that she had an intramural growth which was undergoing decomposition, and that she was suffering from septicemia induced by the absorption of the sloughing intra-uterine mass.

I made a laparotomy upon this patient with the expectation of doing one of two things: 1, removal of the uterus and tumor by suprapubic hysterectomy, if possible; and 2, if this could not be accomplished, I designed tying the ovarian arteries as a preliminary step to the operation. Upon opening the abdomen, the uterus was found so enlarged and fixed in the pelvis, that it was impossible to remove it by abdominal hysterectomy; and as the ovarian arteries did not seem to be filled with blood, I immediately closed the incision in the abdominal wall without doing anything further.

The patient now being chloroformed, I do the newest form of hysterectomy, that advised by Dr. E. H. Pratt of Chicago. In this particular case it is necessary to do two things that are not mentioned by Dr. Pratt. The first of these consists in slitting through the perineum and the perineal body so as to allow room for work, because this lady has a very close introitus, which would prohibit any manipulation within the pelvis. The next step is to temporarily tie the uterine arteries by the method which has been advocated by Dr. Franklin H. Martin of Chicago. Dr. Pratt, in his description of his method of hysterectomy, says that the preliminary tying of the uterine arteries is not necessary; but as this particular case bleeds so freely as to interfere with the operation, and at the same time jeopardizes the life of the patient, I have deemed it best to add this step to the plan advocated by Dr. Pratt. Having tied the uterine arteries, I pack the canal tightly with gauze, then cut with a knife entirely around the cervix through the mucous membrane and the submucous tissue, until I reach the free and loose connective tissue which envelops the body of the uterus. Dropping all instruments, I introduce my fingers within the slit, and rapidly tear away the uterus and its tumor from the peri-uterine structures. This is very rapidly accomplished. As I reach the vicinity of the fundus, I exercise a little more caution in the separation, lest I should penetrate the peritoneum which covers the uterus at this point. The separation is easily and rapidly accomplished, and with almost absolutely no hemorrhage. Indeed, it is surprising that there is not more loss of blood, and almost equally so is the ease and rapidity with which the enucleation was accomplished. For the removal of the uterus and the tumor, not more than ten minutes were required. The whole operation, including the sewing up of the perineum, and packing the cavity with iodoform gauze did not take us more than twenty-five minutes.

It seems to me that this operation will prove an admirable one for cases of this kind, and it is possible that it is also applicable in cases of early epithelioma of the cervix; but usually when cancer of the os has advanced far enough to be recognized by the physician there has been infiltration of the tissue above and implication of the tubes and ovaries; so that complete hysterectomy with removal of the tubes and ovaries per vaginam (or through the abdomen) is the only treatment to be recommended.

[1] Clinical lecture delivered November 14.

### HYDROCEPHALUS.

The second case which I present to you is a little patient who is being treated by Dr. H. E. Pearse. The child is 5 years of age, very small in development, but with an enormous head. At birth she was normal in every particular, and was as other babies are until the age of 5 or 6 months. At this time she was attacked with meningitis, or cerebrospinal meningitis; from this time on the head gradually enlarged and the child became idiotic, until to-day it presents the typical symptoms of chronic hydrocephalus—small in development, with a head which measures twenty-five and one-half inches in circumference, and eighteen inches from ear to ear, with strabismus and the idiotic countenance.

The reason this child is brought to the surgical clinic is to ascertain whether or not anything can be done for its relief by surgical measures. Dr. Pearse recognizes the fact that in a case of this kind, there is nothing but drainage of the ventricles or subdural space, which promises any hope. Results from the surgical treatment of these cases have been quite favorable, though the death rate has been much higher than in other operations upon the head; about one case in five recovers entirely; two improve and two die. The history of a successful case is usually about like that given by Illingham:

The patient, a boy of 3 years, was hydrocephalic from the age of 9 months; was unaffected as to intellect, but suffered from sleeplessness and pain; a trocar was introduced into the ventricle and a considerable quantity of clear, serous fluid allowed to escape; drainage was made with a collared cannula, but this was pushed out inside of two weeks, and an uneventful recovery resulted.

A considerable number of similar cases can be found in recent medical literature. On the other hand, an equally numerous group can be collected like the following record in my own case book:

Girl, age 4 years, hydrocephalic from the fifth month; head measuring twenty and one-half inches in circumference and fourteen inches from ear to ear; head hard; was trephined April 25, and drainage of ventricles established; temperature was never higher than 100, but from time of operation, strength (always poor) began to fail, and child died of exhaustion May 1, six days after operation.

The operation consists of removing quite an area of the skull, an inch or more by two inches, and then waiting a day or two until the brain has accustomed itself to the change in pressure; then a cannula is thrust into the ventricle (or subdural space) and fluid allowed to escape. As a result of long-continued experiment, it may be stated that the central cavities may be drained either from the anterior cornua by going through the frontal lobes, from the posterior horns through the occipital lobes, or from the body of the lateral ventricle through the parietal convolutions. The procedure for the first is to push the hollow needle horizontally inwards through the posterior extremity of the second frontal convolution; for the second, the needle must be inserted through the posterior extremity of the superior temporosphenoidal lobe; and for the third, the needle is thrust through the lower end of the second parietal convolution.

The quantity of fluid withdrawn must vary according to the size of the head and the effect produced. In some cases, several ounces can be allowed to escape; repeating the tapping in a few days; in others it is best to insert a strand or two of sterilized silkworm gut, and allow permanent slow drainage to proceed into the antiseptic dressings, which must be changed as soon as saturated. If too much fluid escapes,

convulsions will follow; this mischief may be rectified by injecting normal salt solution to the amount of an ounce or more, and temporary arrest of the drainage; or, as I prefer, iodoform emulsion may be used for injection purposes.

Sometimes traumatic hemorrhage into the ventricles is a complication. In such a case, the advice of Keen is to be followed: instant trephining and evacuation of the clots. Its early recognition, however, must be very difficult.

In this particular case, it seems to me that operation is entirely out of the question, in the physical condition of the patient, as she is suffering from a subacute bronchitis and from an edema of the glottis, from which she nearly suffocates at each paroxysm of coughing. Many of these cases die from pulmonary and laryngeal complications; and it is probable that this little patient will end its life in this way. If, however, the Doctor is successful in treating the present trouble, we can then explain the possibilities of the operation to the parents, and follow the plan which I have just described if they decide in favor of having it done.

### A CASE OF HEMATURIA.

Our third patient, a gentleman age 55, has been sent by Dr. C. L. Burke of Argentine, Kan., for diagnosis. He is evidently neurotic, confesses to impotency, and complains of passing bloody urine at irregular intervals. He comes seeking relief from the latter, to which he ascribes his ill health; he is directed to this clinic for us to determine if he needs surgical treatment. The first thing to decide is whether he has hematuria or hemaglobinuria—as in each the urine may be tinged red. We may exclude hemaglobinuria by the fact that there is no cause, that is, there is no continuous use of certain drugs, like potassium chlorate, glycerin, some of the anilines, etc.; no partaking of certain edible fungi; also by the fact that this trouble has persisted for more than two years; hemaglobinuria commonly being a transient condition whereas hematuria may be long continued. But we must remember that there is a well-defined disease characterized by hemaglobinuria as its chief symptom, generally paroxysmal as in this case, and sometimes long continued; but questioning reveals the fact that the blood has appeared almost daily for months, though not always; and is not associated with exposure, a chill or violent emotion; and examination of the urine with the microscope (by Prof. Jos. Sharp) shows the presence of blood corpuscles in great abundance. So we are compelled to decide that we have hematuria and not hemaglobinuria.

Is the hematuria of urethral, vesical or renal origin? Let us see.

The endoscope reveals no pathologic condition of the urethra anteriorly and the steel sound shows nothing but a hyperesthetic deep urethra. Examination by the finger in the rectum detects an enlarged prostate; but this is usual in men of his age; and if the hematuria were dependent upon this cause it would be preceded by and associated with a marked vesical catarrh. There is no history of such a trouble and the microscope fails to show pus cells, triple phosphate and large quantities of bladder epithelium, as would be the case in vesical catarrh—so we exclude the urethra and the prostate from etiologic factors.

We now pass the hollow sound into the bladder and make careful search for calculi; none being detected the sound is made to traverse the whole area of the bladder walls, inch by inch, to discover epithelioma, papilloma or other form of tumor which might act as a cause. The sound gives no evidence of abnormality, and the patient manifests little signs of discomfort, so we would conclude that no pathologic condition exists in the bladder; but to be sure that the manipulations have caused no bleeding the bladder may be partially filled with warm boric solution, and this passing away uncolored confirms our opinion. There being no urethral and no vesical cause discoverable, we are forced to believe the hematuria of renal origin.

Examination, is therefore, made to determine whether or not it can be relieved by surgical treatment. Auscultation gives no evidence of cardiac lesion, percussion discloses no cirrhosis of the liver and palpation reveals no abdominal tumor—the three causes of obstruction to the return of blood from the kidneys. There is no history of colic, no pain, no tumor in the region of the kidney and no pus in the urine from suppurative pyelitis—the usual symptoms of renal calculus.

Having by exclusion, reached the conclusion that this is not a surgical case, I am compelled to send the patient to the medical clinic, as it is certain that the hematuria arises from embolism or thrombosis (the latter usually dependent upon atheroma or calcification of the vessels of the kidney), in which case the collateral hyperemia gives rise to repeated escape of blood into the tubules or into the pelvis of the kidney; or to nephritis; or to disease of the renal vessels, (aneurisms, etc.); or possibly to some depraved condition of the nervous system.

### STRICTURE OF THE RECTUM.

The last patient is a colored woman of 24 years, who has a stricture of the rectum of three years' duration; it has become very close and greatly interferes with the patient's comfort and health. When she is under complete anesthesia I insert my knife through the stricture, pass it directly backward to the coccyx, and at one sweep cut through stricture, sphincter, skin and all. The inferior hemorrhoidal artery is caught and twisted, the rectum and wound thoroughly irrigated and the whole quickly packed with iodoform gauze, secured by a pad and a T bandage. The gauze may be removed at the end of forty-eight or seventy-two hours and the wound allowed to heal by granulation.

The subsequent history of a case of external proctotomy, as this operation is called, is usually quite satisfactory; far more so than in internal proctotomy (division of the stricture without cutting the sphincter or the anus) which has often been followed by pelvic inflammations, septicemia and even death. In some cases no attention is needed after the removal of the gauze, but in others it is necessary to pass a large rectal bougie from time to time to prevent too marked contraction of the cicatrix. Restoration of the function of the sphincter occurs in from a fortnight to two or three months.

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## PERITONITIS AND POST-OPERATIVE SEPSIS.

BY A. H. CORDIER, M.D.

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The peritoneum is a "sacred sac," and he who permits the surgeon to enter therein with unclean hands and dirty instruments will suffer (not from his own iniquities), but from the septic agents introduced into the peritoneal cavity. Cleanliness is next to godliness in intra-peritoneal surgery.

Peritonitis is a disease of the gravest character, presenting many varied types and symptoms. One case dying with a diffused septic peritonitis with a sub-normal temperature and a pulse of 55; another seemingly with the same local pathologic process

present, will have a temperature reaching a dangerous hyperpyrexia, with a pulse of 180. In one case you will find a distended abdomen, filled with paretic bowel and rigid abdominal muscles, and writhing from the pain. Again you will find a case with a like origin, with a flattened abdomen, free from pain and tenderness, and at the *postmortem* find very little evidence of so grave and rapidly fatal malady. It is from this obscurity or irregular run of the disease (peritonitis) that I have added to this discussion post-operative sepsis—a condition often mistaken for and treated as peritonitis. It is generally admitted that, with the exception of the tubercular peritonitis, this disease is always of a traumatic origin. That there exists an immunity, more or less, to septic invasion in the peritoneum, no one will doubt. This serous membrane with its endothelial covering has the power of digesting large blood clots and gelatinous extra-uterine babies, if these foreign bodies are of an aseptic character. I have seen the victim of a ruptured tubal pregnancy of tenth week recover without any operative procedure, the extravasated or free blood in the peritoneum being absorbed within a few weeks. Unfortunately this is not the usual history of these cases when not relieved by a surgical procedure.

A form of peritonitis often met with by the abdominal surgeon is one due to a ruptured ovarian blood cyst, abscess or pyosalpinx. A case known to have a collection of pus in the pelvis, should with no exception, be operated upon at once. It is true in many cases a little leakage may take place from a Fallopian tube filled with pus, and the woman escape with only a slight localized pelvic peritonitis, followed by the invariable intestinal and omental adhesions endangering her life from a strictured gut, dilated ureter and surgical kidneys, ruptured gut or bladder. The next attack may prove fatal by the local process becoming a diffused one.

There seems to be a peculiar immunity established by a slow vaccination or inoculation process, in many of these old pus cases.

I have repeatedly in "hulling out" old ovarian abscesses had a pint or more of pus escape into the pelvic cavity, and with irrigation and a drainage tube, these cases do well. If in this same case you place your patient in Trendelenburg's position and the pus is permitted to flow toward the diaphragm or in that portion of the cavity not protected by the local inoculation, as is the pelvic peritoneum, the patient will surely have greater dangers to encounter and many will die from a peritonitis regardless of the prophylactic irrigation and drainage.

The abdominal peritoneum is much more susceptible to septic invasion than the pelvic under all circumstances. You see this in comparing the recoveries in two cases where the uterus has been removed, one by vaginal, the other through an abdominal incision. In one case the operation is performed through a septic cavity, and yet the cases have a convalescence compared by one author to an "ideal puerperal getting-up." It matters not how much irrigating fluid is used, where an abscess has ruptured into the peritoneum, all the septic matter can not be removed; even though a microscope be brought to the surgeon's assistance, he could not remove it all. A few drops only of the last irrigating fluid or the fluid from the drainage tube, introduced into a clean, healthy peritoneum may induce a rapidly fatal septic peritonitis.

In appendicitis you have an acute process in the "upper peritoneum," the pus being of a most virulent character, a small quantity of which is sufficient, if turned loose into the general cavity, to produce a rapid and fatal peritonitis. Hence the practice, in operating for a "walled off" appendicitis, of never attempting to break up adhesions for fear of entering the general cavity, an accident or procedure sure to lead to the development of a dangerous or fatal peritonitis. In ovarian abscesses or *intra-pelvic* inflammatory processes, the wise procedure is to break up all adhesions, remove diseased structures and liberate healthy organs.

In gunshot, stabbed and other wounds involving the hollow viscera of the abdomen, a fatal termination is always expected (rare exceptions), from a peritonitis induced either by the weapon, missile or the escape of visceral contents teeming with pathogenic bacteria. In such cases the surgery must be *early* and *thorough*.

A large abdominal incision increases the dangers from septic invasion, and at the same time exposes the intestines to more handling and consequent injury. A bowel that has been exposed for a time of long duration to the atmosphere, and has been permitted to become dry and blanched, has sustained sufficient injury to materially injure its functionary powers, and any agent, be it what it may, in abdominal operations that interferes with the function of this canal endangers the life and safety of the patient from the dangers attending a peritonitis. The intestines are one of nature's sewers (drainage tubes), the function of which is to absorb through the peritoneum, fluids in the abdomen, and to eliminate the same. *In a paretic bowel this function is reversed.* The peristaltic action is retarded or lost, the absorptive and digestive functions suspended, and the eliminative action absent, the contents of the paralyzed gut, already teeming with pathogenic bacteria, act as an inoculated culture tube with its two ends sealed; gases soon form in large quantities, the muscular and serous coats are dilated and thinned until the microörganisms find easy avenues of escape from the intestines into the peritoneal cavity, the function of which, as a protecting agent, is soon lost, and its great cavity converted into a vast bacterial hotbed, and the patient's whole economy saturated (from this source) with these poisonous germs and their ptomaines. Such is the progress of invasion where there have been no germs introduced into the peritoneum from without, but where the operation has been a prolonged one, with the consequent handling of the intestines and resulting injury to the great sympathetic system as a result of the prolonged exposure and traumatism.

I have seen a case go on the table with an intestinal canal empty and as flat as a tape line, and within two hours after operation find it enormously distended as a sequelæ of prolonged and unavoidable handling. All operations within the abdomen should be quickly performed by skilled and clean hands. It has occurred to me, as a good and safe procedure, where the bowel is so enormously distended and refusing to expel its contents of liquid and gases, to perform, under cocain anesthesia, a right inguinal enterostomy, wash out the intestines with an antiseptic solution, as boroglycerid, salicylic acid or boracic acid, this to be repeated as often as necessary. Other drainage should be carried out. This

opening in the bowel would permit the gas to escape unobstructed by a sphincter and would give an outward drainage; it would reverse the poisonous endosomosis, and it would give the paretic gut the best chances to regain peristaltic function and tonicity. This procedure would relieve the vomiting which is one of nature's efforts to rid the canal of its offending contents. The stomach is the last of the alimentary organs to lose its contractile powers. A paralyzed peritonitic bowel will not empty itself through a hypodermic needle, but with an opening such as I have advocated, the gut will collapse and the patient will quickly feel greatly relieved from the oppressed breathing, irregular heart action and the pain from the distension. If the patient recovers, the opening can be safely closed at any time. This procedure, I think, should be resorted to early in the most desperate cases where experience has taught that all similar cases have died without it. This procedure, when salines fail, offers the best chances for the relief of the "trinity—peritonitis, tympanitis and vomiting, the furies of abdominal surgery." (Greig Smith.)

Before resorting to this procedure, salines and injections should be given a fair trial.

The usual operation for peritonitis is the procedure for the removal of the exciting cause, as appendicitis, suppurating dermoids, postpartum poisoning, etc.

The consideration of the fever following labor is one at this time receiving much attention, and is now, as it was by Dr. Holmes, fifty years ago, recognized as being of septic origin, the poison being often carried or introduced into the genital canal by the physician. An exception to this being the auto-genetic type—where the woman at time of delivery has a real pathologic process which sustains an injury during parturition and leads to the development of a peritonitis—as an abscess in an ovary or a pyosalpinx. The treatment here is the same as for other forms of peritonitis. Remove the source of infection. Unfortunately all treatment of diffused septic peritonitis has proved futile. *Only early or abortive surgery* will check the rapid and dangerous invasion of this disease. All abdominal operations should be performed under absolute aseptic precautions. The smallest incision compatible with the work to be done; the shortest period of anesthesia and the most rapid operative work leaves the patient in a condition the better able to withstand or combat any tendency to destructive invasions. Irrigation with hot sterilized water, followed by intelligent use of drainage tube, should be practiced in all cases where there exists a suspicion that the case is a septic one. These agents are used here as prophylactics. The intestinal canal may be "toned up" by giving 20 drop doses of tincture of nux vomica three times a day for a few days before the time set for the operation, and continued in form of strychnia hypodermically for days afterward. An empty stomach and intestinal canal will cause these organs to be handled and exposed less during the operation, and will conduce to the safety and comfort of the patient from vomiting and gaseous distension. If the intestines are empty the peritoneum will absorb and digest much better the fluids in its cavity. Withhold fluids for several hours after the operation. If excessive thirst exists give an enema of six ounces of peptonized milk. Avoid sweet milk and eggs by the stomach, as these articles of diet are gas forming agents. Avoid all preparations of opium. If it becomes necessary to give any form of this drug give codeia. If drainage is being used, see that the tube is kept dry by frequent aspirations. If any symptoms arise pointing to the development of a peritonitis, such as persistent vomiting, inactivity of the bowels, distended abdomen, elevation of temperature, and quickened heart beats, give the salines (sulph. magnesia is the best) in good size doses (one to two ounces) each two or four hours until bowels act, or gas passes in abundance. To this course may be added turpentine enema (3ii to pint water) to which two ounces of salts are added. If this course succeeds, in many of the cases improvement will be noticed at once. The bowels must be kept acting each day. If patient can not retain the salts, give one-tenth grain of calomel each hour until bowels move or vomiting ceases. Many cases will be relieved of the vomiting where no peritonitis exists by giving nutrient enemas each three or four hours. Many post-operative cases die from systemic infection before the disease has had time to become general. In these cases the development may be initiated immediately after the operation, and with symptoms resembling those of shock, the patient dying within twenty-four or forty-eight hours. Here large quantities of strychnia, digitalin and whisky must be given.

The subject of peritonitis can not be discussed without considering the *trio:* 1, fermentation fever (Bergman); 2, septic intoxication (sapremia), and 3, septic infection or true septicemia. I know of no better way to make these classifications understood than by reporting illustrative cases occurring in my practice:

*Case 1.—Fermentation fever, following a salpingo-oöphorectomy.* Six hours after the removal of sound uterine appendages for relief of the symptoms due to the presence of a uterine fibroid, my patient's temperature began to go up, reaching 104 degrees F. within twenty-four hours; was not preceded by chill; pulse increased correspondingly. The case presented no other alarming general symptoms; said she felt very well. Fearing I had the beginning of a dangerous sequela to combat, I removed my dressings and found a large indurated(?) spot to one side of my incision, in the abdominal parietes. I cut a couple of stitches and thus liberated a large collection of imprisoned blood that was forcing the fibrin ferment into the blood. My patient's temperature and pulse within a few hours returned to normal.

Some authorities doubt the existence of an aseptic fever. If there is such a condition as fermentation fever, this case belongs to that classification:

*Case 2.—Sapremia (absorption of product of putrefaction) following a criminal abortion, retained placenta.* After repeated endeavors with some blunt instrument, this young lady succeeded in producing an abortion. The fetus and part of the membranes and placenta were expelled. She was four months pregnant. Three days later a physician was called and found her with a temperature of 103 degrees F., having had a chill a few hours before. Pulse of the character described as indicating the absorption of the preformed ptomaines of putrefactive bacteria; a soft, compressible, quick pulse, indicating enfeebled heart's force. Vomiting, anorexia, tongue furred and dry, clammy perspiration, fetid discharge from vagina, tympanitic abdomen. I saw the case a few hours before death, at which time her temperature was 105 degrees F., pulse imperceptible, delirious, restless, clammy perspiration, dilated pupils, cyanotic, all pointing to an early dissolution. At the *postmortem* I found a large, soft uterus, with half of a rotten, stinking afterbirth in its cavity. This case could have been saved by a timely surgical procedure. Curetting, irrigation, iodoform gauze and drainage.

In this case there was some tenderness over the abdomen. The early removal of the cause will cure

the majority of these cases, unless a mixed infection far advanced exist at the time:

*Case 3.—Septicemia, septic absorption, progressive sepsis.* Presented the initial history of Case 2, and started as a true sapremia (absorption of the products of putrefaction) but on the third day a dirty or unsurgical curetting was done, which added a secondary (pyogenic) infection; the absorption of the products and the rapid increase of the same in the blood made the case a desperate one from this time. At the *postmortem* the peritoneum was found to contain much muddy fluid, with evidences of a general peritonitis; the local process had not progressed to that extent to account for the death, hence the certificate was signed, septicemia. An early hysterectomy with the removal of the appendages which were diseased, may have saved the patient by cutting off the supply of septic material entering the blood. The accompanying peritonitis was induced by an invasion of the germs through the Fallopian tubes.

I have reported these cases to illustrate what an easy matter it would have been to have diagnosed them as peritonitis, had they all been postoperative laparotomy cases.

In a peritonitis with well-marked constitutional septic manifestations, to resort to prophylactic or abortive measures should be early and thorough. After a laparotomy, if this condition is developing, the stitches at the lower angle of the incision should be cut, and the pelvic and lower abdominal cavity irrigated with gallons of hot salicylated or borated (boric acid) solution, and a drainage tube introduced. This washing of the peritoneum should be repeated two or three times during the twenty-four hours. It can be done without an anesthetic in the majority of cases.

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## SOME THINGS THAT SHOULD NOT BE FORGOTTEN BY THE GENERAL PRACTITIONER.

BY B. C. KEISTER, M.D.
SOUTH BOSTON, VA.

First, he should recognize his duty to himself, and second, his relation to other physicians. I believe it was the late Dr. Flint who made the remark that "every physician who is true to himself should be a thorough gentleman, a thorough business man and a thorough physician."

First of all, he should be in sympathy with the Christian religion; even if he is not a member of any special branch of the orthodox church, he should certainly not be a skeptic or an infidel. It would be exceedingly difficult for a skeptical physician to hold the confidence of one of his church-going patients through any serious illness, to say nothing of the many other disadvantages, under which he would have to labor. I may be pardoned for saying that we have in our ranks, men who are not only skeptical on religion but *peculiarly so* on the science of medicine. They delight to speak disparagingly of the science and are fain to show an air of ostentation that well characterizes the peacock or the *non compos mentis*. This latter class of physicians, to say the least, are unworthy of the title they bear; for to them is due the skepticism that exists among the laity on the science of medicine, and thus a great barrier is formed between physician and patient, to say nothing of the harm done to the credit of the profession. It is true, there are wonderful changes constantly being made in the art of medicine, but generally speaking, these changes are only steps toward a better and more perfect practice of the science. As man's constitution changes so must our practice change, in order to adapt its merits to man's necessities. Medicine is a progressive science. The advance that has been made in the past ten years in the science of medicine and surgery far surpasses that of all other branches of knowledge. Dr. Nicholas Senn, who is one of the progressive surgeons of the world, remarked to a large body of physicians a few months ago, that there had been more genuine progress made in the science of surgery within the past ten years than had been made during the previous one hundred years. Thus we see how grandly our great science is keeping abreast with all others, and I may add, since antiseptic surgery and electricity have come to our aid, we are fast outstripping all other professions on the broad road of progress.

All honor to such men as Koch, Pasteur and Sternberg who have accomplished wonderful results in their researches with the microscope, in ascertaining the cause of disease. All honor to such men as Senn and Gerster, Loomis and Osler for putting into practice the teachings of the former, and thus bringing about a grand revolution in the practice of medicine. It is the duty of every true physician to hold up the standard of his profession. And to do this successfully, he should be both a thorough gentleman and a thorough physician. He should keep abreast of the times, by spending at least three months out of every three years at the medical centers, where hospital advantages are offered to the general practitioner as well as to the specialist. This is a duty that every true physician owes to himself. If every general practitioner would do this, he would be better prepared to do his work, instead of allowing his patients to go to the city specialists to be treated for the very disease that he could have treated equally as well at home. It is passing strange that there are so many general practitioners, who from mere want of confidence in their own abilities, will send their patients to the cities to be treated by men who have had less experience and fewer collegiate advantages than they have had. I am acquainted with a physician who sends at least one-third of his cases to the city to be treated; these doubtless could be treated at home just as well. I claim that there is but one advantage the prominent city physician has over the town or country physician, namely, the hospital advantages, where good and skilful nursing is required after capital surgical operations. We need a few more McDowell's and Sims in the country villages to encourage us to compete with the city surgeons and city specialists.

I long to see the day when every village and country doctor will be as handsomely equipped in office facilities, etc., as any city specialist, and thus be prepared to treat his cases at home, instead of sending them with their pocket-books full of money to the city specialist. I am proud of the fact, that out of a yearly three thousand dollar office practice, I have thus far been able to treat my cases at home, and I mean to continue to do so as long as I remain in the practice of medicine. There is no just reason why every physician should not keep abreast of the times as above indicated, and be equipped with a full supply of the necessary surgical instruments, galvanic, faradic and cautery batteries, etc. There are many lives sacrificed, wholly on account of the attending physician not having proper surgical instruments to relieve the patient. To cite an instance of this kind:

About four weeks ago I was summoned fifteen

miles in the country to relieve a man who was suffering from suppression of the urine, due to organic stricture of the urethra. The attending physician, who is a very clever man and a good doctor, did not have a urethrotome or any suitable bougies by which to relieve the patient of his intense suffering, and he had not passed scarcely any urine for the previous thirty-six hours; doubtless he would have died very soon from rupture of the bladder or uremic poisoning had he not been relieved. The pay received in this one case would have been sufficient to purchase two or three urethrotomes and a sufficient number of filiform bougies to last five years.

I claim that in nine cases out of ten it is *sheer stinginess* on the part of the physician, that he is not properly equipped with suitable instruments. Every physician should have in his office one good twenty-four cell galvanic battery, two good faradic batteries and one good galvano-cautery battery, (I like McIntosh's batteries better than any other make). If he has studied electro-therapeutics and can master it well, he will find it a wonderful help to him in the treatment of diseases peculiar to women.

I am very much inclined to believe, that in the course of time electricity will take the place of the surgeon's knife in gynecology. I can testify to its proficiency in the treatment of fibroid tumors of the uterus, subinvolution and many other diseases of this class. Conservative surgery is yielding better results every day, and I believe the time is not far distant when women's ovaries will be let as severely alone by the abdominal surgeon as the Holy Bible. Away with the idea of a physician's reputation being gauged or made by the number of laparotomies he performs or the number of women he unsexes. It was my privilege a few months ago to be an eye witness to some ten or twelve laparotomies, and I must say, with all due deference to the skilled operators, that in my humble judgment, at least two-thirds of those poor women would have been far better off without the operation. I may cite one case in particular, that had been diagnosed cystic disease of both ovaries, but on opening the abdomen and close examination the cystic disease failed to show up. The operator, however, thought it best to remove the ovaries lest the disease should show up later on. Now, this simply shows how a thing may be run into the ground by the sheer craze for reputation. There were some fifteen or more other general practitioners who witnessed this operation with me, and it was interesting to see the exchange of frowns from one to the other during the latter part of the operation. The skilled professor tried very hard to justify his theory for castrating this poor woman, but it failed to have the desired effect upon those who were present. The main symptom complained of by this woman was pain in the region of both ovaries at each menstrual period, with some irregularity of her menses. I claim that such cases can be relieved, if not cured, by medicines and electricity. Dysmenorrhea with narrowing of the internal os of the uterus can be successfully treated by three applications of Goodell's uterine dilator, followed each time with six minutes intra-uterine electricity by the faradic battery. I have never failed to cure a single case where this treatment was adopted.

I was very favorably impressed with the remark made by Prof. Bangs of the Chicago Policlinic, in one of his lectures on gynecology, when he said, "that after some fifteen years of active practice in his *special* branch, he had come to the conclusion that three-fourths of the diseases that women suffer from were due to constipation of the bowels." He also remarked in one of his lectures on cervical lacerations, "that three-fourths of these lacerations were almost harmless, and hence did not require operative procedures and that conservative treatment yielded far better results in such cases."

Thus we see, there is much for the general practitioner to consider before allowing his female patients to go off to be treated by the city specialist. There is no plausible reason why the general practitioner should not do as good work and get as good results in the majority of such cases, provided he has as well equipped an office as the city surgeon or specialist. In doing this he not only saves his reputation from being at the disposal of the criticising city specialist, but of equal import he saves hundreds of dollars that would otherwise leave his own needy pockets for those of the specialist. There is no reason why the general practitioner should not operate for cataract, or perform iridectomy, or remove a nasal polypus, or do any other work that he is called upon to do in the science of surgery and medicine, provided he keeps abreast of the times and is properly equipped for his work. He should consider that the city specialist's opportunities for acquiring knowledge are just the same as those of the general practitioner, for both sit side by side in the lecture hall, and hear the same lectures and witness the same operations in the same amphitheaters. It is no less the privilege of the general practitioner to take special courses at the post-graduate schools at the great medical centers, than it is the privilege of the specialists. And just here let me add, there are many who call themselves "specialists" who have taken up their *specialty* without taking a regular course in the science of medicine, thus leaving out the real ground-work of their specialty. Such men should not bear the title of doctor. They are not prepared to do their work near as well as the general practitioner. Some of your readers may infer from what I have written that I mean to cry down the specialists. I simply desire to elevate the general practitioner and place him just where he rightly belongs, regardless of the claims of the specialist. It is true, we have some very worthy and distinguished specialists, and far be it from me to detract one iota from their escutcheons. All honor and praise to such men as Chisolm, Mundé and McGuire, all of whom were once general practitioners, and well grounded in the science of medicine before they became specialists. We need more such such liberal minded men in our profession to absorb the many mushroom specialists who are constantly springing up over the country.

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## HYSTERICAL LOCKJAW.

BY GEORGE J. PRESTON M.D.

PROFESSOR OF NERVOUS DISEASES, COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

It is always interesting to observe the manifestations of hysteria in limited and definite areas, because if ever anything like a distinct pathologic lesion is discovered it will be in such cases. Conditions causing widespread hysteria with multiform symptoms are, like widespread lesions in the brain, too complex

for purposes of minute investigation or exact localization. It is to the limited lesions that we must look for a starting point, lesions occupying areas sufficiently circumscribed to permit of thorough examination and careful comparison with corresponding normal regions. Such conditions for example as contracture of a single limb, or a single group of muscles, monoplegia, blephorospasm and the like. These minor symptoms of hysteria do not attract the same attention as the more marked and extensive manifestations of the disease, and are perhaps often overlooked by the general practitioner or at least disregarded. For the reason given above, however, it is very necessary that these isolated symptoms should receive careful attention, and the clinical picture of the most frequent of them carefully drawn, for at rare intervals opportunities will occur to investigate the region of the brain to which such symptoms can be referred. The following cases illustrate a form of hysterical contracture, which although it was recognized many years ago is not often described:

*Case 1.*—Negress, age 19. Showed convulsions, ovarian tenderness, headache, and other classic symptoms. After every convulsive seizure she had rigid contraction of the temporal and masseter muscles preventing the opening of the mouth. The lockjaw continued for some hours or longer after the convulsions, and did not reappear until the next convulsive seizure. There was no record of any rigidity of the muscles of the neck, or other parts of the body.

*Case 2.*—Negress, age 20. Gave a history of having cut her finger three days previous to the onset of the lockjaw. As long as she was undisturbed and quiet there was no contracture, but upon the least excitement the jaws became so tightly closed that it was impossible to open them without using more force than was considered safe. There was also spasmodic contracture of the muscles of the neck and shoulders. Patient was cured by two or three applications of the faradic current aided by suggestion. She was kept under observation for some days before any suggestive treatment was instituted, and treated with antispasmodics with no benefit.

*Case 3.*—A young woman of about 20 years was brought to me with the history of having been unable to open her mouth for more than a week. The attack had come on suddenly, and as far as could be learned there was no emotional shock preceding it. She was of a rather hysterical temperament, but there were no permanent stigmata except the contracture of the jaw muscles. There was little or no stiffness of the neck; the teeth were tightly clenched and the greatest force that was considered safe could not overcome the contraction. Her teeth were blackened by the food and medicine that had been poured into her mouth. As the patient was rather apprehensive of hypnotism, the non-hypnotic suggestion was employed. She was carefully placed in front of a large battery, and a mild galvanic current passed through the face, the electrodes being placed one on each side of the jaw. This current was alternated with a faradic current, repeated suggestions being made that in a certain time by the watch she would be cured. In a few minutes the contracture disappeared.

In Case 2 there was the suggestion of lockjaw from the cut finger, but in the other cases there seemed to be nothing to suggest it, nor did the patients allude to their affection as lockjaw.

Incidentally the last two cases illustrate the value of non-hypnotic suggestion. The most important and useful lesson we have learned from the study of hypnotism, which has been carried on with such ardor by the French school during the past half dozen years, is that non-hypnotic suggestion is far more generally applicable, in many cases is as potent as the hypnotic suggestion, and the impression made is more enduring.

## NECROLOGY.

**J. M. Gatewood, M.D.** of Keith, Ohio, January 19.

**J. A. Hammond, M.D.** of Minda, N. Y., January 7.

**Hampton E. Hill, M.D.** of Saco, Maine, January 9. He was 44 years of age.

**R. Murphy, M.D.,** a member of the Wayne County Medical Society, the Michigan Surgical and Pathological Society, and for twenty years a practitioner of medicine in the State of Michigan, died in Detroit on the morning of January 20.

**Thomas A. Dunkle, M.D.** died at Reading, Pa., January 14, aged 50 years. Deceased graduated from Jefferson Medical College in 1863. During 1862 and 1863 he was an Acting Assistant Surgeon in the United States Hospital at Fourth and George Streets, Philadelphia. He practiced medicine in Reading over twenty years.

**John K. Walsh, M.D.** of Washington, D. C., January 15. Dr. Walsh was born in Washington, and graduated at Georgetown College in 1861. He was at once appointed Assistant Surgeon in the Navy and served with distinction throughout the war and afterward became a surgeon in the Army. After three years of service he resigned and took up private practice in this city and afterward accepted the position of Assistant Surgeon at the Leavenworth Soldiers' Home. He resigned three months ago and returned to Washington.

**William L. Walters, M.D.** of Richmond, Va., January 15. Dr. Walters had been in declining health for twelve months, but was confined to his bed only about two weeks. He was in his sixty-fifth year. He came to Richmond from Staunton about eighteen months ago. For thirty years he was an active practitioner in Augusta County where he had an extensive practice. His wife was a grand-daughter of the Rev. William Calhoun, formerly pastor of Hebron Church, in Augusta County, and was a great-grand-daughter of the Rev. James Waddell.

**John A. Thompson, M.D.,** the well-known young physician and eye specialist of Wrightsville, Pa., died at his home in that place January 13, after an illness of about six weeks of consumption. The deceased was well and favorably known throughout York and Lancaster Counties, was about 35 years of age, and a son of the late Dr. J. A. Thompson, who died a few years ago. Dr. Thompson enjoyed a large practice. He was a graduate of the University of Pennsylvania after which he took a course in a European college. He located in Philadelphia where he enjoyed a lucrative practice. He was a member of the Lancaster City and County Medical Society, also of the State Medical Society and of the AMERICAN MEDICAL ASSOCIATION.

**Joseph A. Pacetti, M.D.** of Jacksonville, Fla., January 12. Joseph A. Pacetti was born in St. Augustine in the year 1838. He first commenced the practice of medicine at St. Augustine, where he followed his profession for several years. His next field of labor was at King's Ferry, in Nassau County. Just prior to the beginning of the war he returned to St. Augustine and opened a pharmacy, which occupation he was engaged in at the time of the State's secession. When war was declared Dr. Pacetti enlisted in the Eighth Florida Infantry, with the rank of Lieutenant. He was in Lee's army and fought in most of the great battles, during one of which he was wounded. For conspicuous bravery he was commissioned as Captain, and served in that rank until the surrender. After the close of the war Dr. Pacetti went to Cuba and engaged in the practice of his profession for several years in the interior of the Island. He was forced to return to this country by the Cuban insurrection, and came to Jacksonville in 1885, and has since been located there.

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SATURDAY, JANUARY 27, 1894.

## REGULATING THE PRACTICE OF MEDICINE IN THE STATE OF KENTUCKY.

In the last six months more interest has been taken in this State in this question than in any other of the Union, owing to the taking effect and the enforcement of a new law. Kentucky was the first State in the Valley of the Mississippi and west of the Alleghanies to pass a law upon this subject. In fact, with the exception of North Carolina, it was practically the first to inaugurate such legislation in the United States. By this is meant the movement that at this time has carried with it nearly every State, and does not refer to the laws that had been enacted many years ago, and had become obsolete, by Massachusetts, New York, New Jersey, North Carolina, and one or two of the other original thirteen States. In 1859, the State Medical Society of North Carolina was incorporated, and a State Board of Medical Examiners created from the members of that Society. All engaged in the practice of medicine at the time of the passage were exempt from the requirements and penalties of the Act, the latter being very light. In 1874, a law was enacted in Kentucky providing for the appointment by the Governor of a Board of Examiners for each judicial district, and that no one should practice medicine unless they were graduates of a chartered medical school, or had a certificate of the Board of Examiners, or had practiced medicine honorably for ten years prior to 1874. The law also prescribed penalties for noncompliance, and the Board of Examiners was allowed to charge twenty dollars for a certificate, the Examiners to receive the fees as compensation for their services. Certificates could be granted for one year, but no longer than five years. Much good was accomplished at first, but in a few years the law became a dead letter in nearly all the districts, and in 1888 it was amended, requiring the registration of the diploma in the office of the county clerk, also the affidavit that the party had practiced medicine in the State since 1864. The diplomas of legally chartered medical colleges by the State, or of reputable and legally chartered medical colleges of some other State or country, certified and indorsed as such by one of the colleges located in the State, or State Medical Society, were recognized. On May 29, 1890, amendments were again made to the law; the most important were that the State Board of Health should certify to the character of the diplomas of colleges of other States, and to prevent traveling empirics from practicing in the State.

The defects of existing legislation were so patent, that on April 10, 1893, the present law was approved by the Governor. The main features of this are that all practitioners, and those intending to practice, have to obtain a certificate from the State Board of Health, and register it in the office of the county clerk; also gives the State Board of Health authority to refuse and revoke certificates. Section 3 of the Act gives the qualifications necessary to obtain a certificate: "First, a diploma from a reputable college legally chartered under the laws of this State; second, a diploma from a reputable and legally chartered medical college of some other State or country, indorsed as such by the State Board of Health; third, satisfactory evidence from the person claiming the same that such person was reputably and honorably engaged in the practice of medicine in this State prior to February twenty-third, one thousand eight hundred and sixty-four." Section 4 forbids any itinerant to register or to practice in any county, and Section 5 says: "The State Board of Health may refuse to issue the certificate provided for in Section 3 to any individual guilty of grossly unprofessional conduct of a character likely to deceive or defraud the public, and it may after due notice and hearing revoke such certificate for like cause. In these cases the applicant may appeal to the Governor." The Act further gives the penalties for violation, and defines what is practicing medicine within the meaning of the law.

More changes have taken place in the legislation of this State in the law upon this subject than any other, and as many of the practitioners have been called upon to comply with these changes three times, it is not at all surprising that some of this class should feel uncomfortable. The present law is a good one, and is simply what experience has taught to be necessary in order to accomplish the end desired, and has required much effort to secure its passage. Opposition to its enforcement was to be expected, but not to the extent that has been developed. A number of reputable medical men have refused to take out certificates, and thus have encour-

aged those that the interests of the people and profession demand should be suppressed. The stand taken against the advertising frauds has arrayed some of the newspapers against the Board, but so far the Governor has sustained the action taken in all cases that have been appealed. The issues involved are not alone of a local, but national character. It is clearly the duty of all reputable practitioners to encourage and support the State Board of Health in the enforcement of the law. Kentucky was the pioneer in many respects in medical legislation. Will the State that has been honored by a MCDOWELL, a DUDLEY, a YANDELL and a host of other shining lights in the profession, lag behind her sister States?

## WAR WOUNDS AND THE STEEL TUBULAR BULLET.

In the Report of the Surgeon General of the Army, recently published, are given the particulars of a series of experiments conducted at Frankford Arsenal, Pennsylvania, by CAPTAIN L. A. LAGARDE of the Medical Department, U. S. A., to determine the effects on the human body of cylindro-conoidal missiles of small caliber fired at various ranges. The experimental bullet was composed of lead incased in a jacket of German silver, its diameter .30 inches, its weight 220 grains. The penetration of this bullet was found to be greater at all ranges than that of the regulation .45 caliber leaden bullet weighing 500 grains. Comminution of bones and disorganization of soft parts were caused by both bullets at short ranges; but at ranges from 350 to 1,500 yards the destructive effect of the smaller bullet became reduced to a mere penetrating wound. This lessened severity is attributed to the slight amount of deformation suffered by the jacketed bullet even after impinging on bone. At ranges beyond 1,500 yards the smaller bullet again produced shattering of bones and great laceration of the softer tissues as its lessened velocity permitted of a sideways impingement. The report is illustrated with photographs of bones perforated or comminuted according to the range of the bullets which caused these injuries, showing the deformation produced by the firing and impact, and of the relative penetration of the old and the new bullet into blocks of wood across the grain. A bullet having a hard cupro-nickeled steel jacket penetrated 19.5 inches as compared with 3.2 inches for the old bullet, and with 5.3 inches for the German silver jacketed projectile. DR. LA GARDE'S conclusions are that the small jacketed projectile will increase the number of wounded and the mortality in future wars, but that the wounds as a whole will be less severe,—more humane. His paper will be republished in the Transactions of the College of Physicians of Philadelphia, Pa.

But, so rapid is the progress of invention that there is already a need for another series of experiments to determine the probable character of the wounds hereafter to be treated by military surgeons; for PROFESSOR HEBLER of Zurich, has tunnelled the small bullet and given it an ogival form in rear, as well as in front, to lessen the resistance it will encounter from the air when fired, and to correspondingly increase its range and penetration. This, the "steel tubular bullet," is now confidently regarded as the bullet of the future. It is 30 millimeters (1.18 inches) in length and 5 millimeters (caliber .20) in diameter, while its channel, bore or lumen, is 2 millimeters in diameter, widening in a funnel shape to 3.6 millimeters in rear. The funnel end is fitted with a light base cap which drops off as soon as the bullet leaves the gun. The effective range of this missile is over 6,000 yards, at which distance it penetrates nine inches into solid wood. Its maximum range is nearly 11,000 yards; and as the elevation required in using this bullet is only one-sixth of that needful for the old .45 caliber bullet, one of the difficulties of long range shooting will be removed. The effects of this bullet of the future on the human body have not yet been determined. It is probable that it will pass through leaving a clean puncture; but as it is doubtful whether the shock of such a wound would suffice to place a man *hors de combat* the return to a bullet of a larger diameter may have to be considered. With such long range small arm missiles, military tactics as well as Hospital Corps management on the field will have to be studied anew.

## CRITERIONS OF PRACTICE FOR MEDICAL SECTS.

The Supreme Court of Errors of Connecticut rendered a very interesting and important decision on May 22, 1893, in the case of Force v. Gregory, which has not yet been officially reported,and which has only just appeared in the advance sheets of the *Atlantic Reporter* (No. 17 of Jan. 10, 1894; Vol. 26, p. 1116). This was an action brought by a minor child, to recover damages from a homeopathic physician, for alleged malpractice in treating her for ophthalmia.

The fact that the action was brought by an infant of tender years, incapable of contracting, and that the physician was called by her father, it was not contended in any way extended or altered the implied contract and duty of the physician. Nor does the court think that, if such a claim had been made, it would have been valid. It further appeared that this physician had, at least to some extent, been the family physician and had previously, as such, prescribed for the child; but to this circumstance, also, there was no importance attached.

Following in the line of many precedents, the court lays down the doctrine that, in the absence of special contract, physicians and surgeons, by holding themselves out to the world as such, impliedly contract that they possess the reasonable and ordinary

qualifications of their profession, and are under a duty to exercise reasonable and ordinary care, skill and diligence. In determining what constitutes reasonable and ordinary care, skill and diligence, the test is that which physicians and surgeons in the same general neighborhood and in the same general line of practice ordinarily have and exercise in like cases. In addition to this, however, regard must be had to the advanced state of the profession at the time of the treatment.

Evidence was offered, on the one side, to show that the treatment and remedies prescribed by homeopathic practitioners were adopted. On the other side, an attempt was made to prove that the regular school of medicine would treat such a case differently, and that the latter treatment ought to have been used. It was also asked that the jury be charged, "that treatment by a physician of one particular school is to be tested by the general doctrines of his school, and not by those of other schools." This instruction was refused, it being charged, instead, that if the treatment laid down by one particular school of medicine was adopted, and the medical testimony offered to prove malpractice related to the treatment prescribed by a different school, it should be considered with regard to any bias or prejudice that might influence those offering it. Doubtless, the court says, this is correct, so far as it goes. The testimony should be so weighed. But if the physician adopted the treatment, not of one particular school in the abstract, but of his own particular school, which he publicly professed and practiced, and the medical testimony offered by the other side related to treatment prescribed by a different school, such testimony should be weighed, not alone with regard to bias or prejudice influencing the testimony of witnesses, but with regard to bias or prejudice which might influence or incline the jury in favor of one school rather than the other.

Not only did not the evidence in this case stop with the statement of how, in the view of the witnesses, such a case ought to be treated, but went further, and stated how "the 'allopathic' school of medicine would treat it." Indeed, it was argued that the respective merits of the "schools" of medical practice were—and, of right ought to have been—on trial before the jury. Such right, however, the court does not concede, holding that the jury should have been told that the relative merits of the two "schools" were in no sense before them for their consideration; that, so far as the physician charged with malpractice was to be judged by either, it was by the tenets, rules, principles and practices of his own school, not by those of another; and that, if he adopted the treatment laid down by his own "school," the fact that another "school" prescribed another treatment tended in no wise to show that he was chargeable with a lack of skill or negligence. Because of these errors, a judgment rendered against the physician was set aside, and a new trial granted.

It would also seem, from what the court said, that if it could be held negligent or unskilful in a given case, to use the treatment prescribed by the school to which the practitioner belonged, such negligence or want of skill must consist either in the mode of use, the application of such remedies under improper circumstances, or because they were intrinsically wrong, inappropriate or inadequate.

## OBSERVATIONS REGARDING THE UNEDUCATED RETINA.

Dr. Frederick A. Cook, who was ethnologist to the Peary expedition to North Greenland, is the author of a series of papers on the peculiar facts observed by him in the far North. The following paragraph relates to the physiology of the eye, and covers a point which, so far as his and our reading goes, has not been traversed before by any explorer of uncivilized lands:

"The most remarkable peculiarity that I discovered was suggested by an accident. I had given one of the natives a lithograph of an actress. He took it to his house and fastened it to the oily walls upside down. When I saw it I changed it, but on entering the house a few days later it was again reversed.

"This aroused my curiosity, and I tried the same experiment on other newcomers, and found to my surprise that they all did the same. Without exception, every individual who was handed a picture book would invert it, and then in awe and amazement carefully examine the pictures. The individuals upon whom I noticed this strange peculiarity had never seen a book, picture, printed or written paper before.

"I asked them to draw for me a polar bear. To this they rapidly responded. but drew the image inverted. Other images and pictures were drawn with the same result.

"After thinking the matter over and more closely examining their eyes an explanation readily presented itself. It is a well-known fact among ophthalmologists that things which we see are transmitted to the retina inverted by a process or a physical law similar to that which inverts a picture in a camera. Thus far, the physiologic phenomena is the same in all men and animals. But in the next stage, where the image or its interpretation is transmitted from the retina to the brain, is where the important difference lies. These natives in their infancy of civilization have not been educated, as we have, by a long series of training and probably heredity, to read pictures as they would natural objects, but instead they hold the picture upside down, so that the image will be transmitted to their retinas in a reverse position, and hence the impression is transmitted to the brain in the most natural way."

On his return from North Greenland, Dr. Cook visited Labrador, and while there observed the same characteristic of vision, to a less extent, among the mountaineer Indians; and later still he has seen a number of young persons in civilized countries, who have not yet been taught the art of picture reading, who have a manifest tendency to hold their pictures upside down.

## MEDICAL AID TO LABRADOR.

Both the English and Newfoundland men have joined to sustain an itinerant medical service for the help of the deep sea fishers and the temporary

dwellers along the coast of Labrador. The English sent the ship *Albert*, with a surgeon who visited in her and from her deck thirty-five harbors, and who treated at least a thousand patients. The settlers are largely of English extraction or birth. They were found to be in destitute condition and were greatly benefited by the presents of clothing taken out by the *Albert*. It is estimated that over thirty thousand fishermen and their families reside, for three to four months, in the natural harbors and islands along the Labrador coast; and during this time the only medical attention available for them is such as is sent out by the mission hospital societies. Two hospital stations have been originated in harbors at which the fishermen are apt to call on their passage up and down the coast.

### VACANCIES IN THE ARMY MEDICAL CORPS.

SURGEON GENERAL STERNBERG has issued a notice which we printed in the JOURNAL of last week, that a Board will be convened in Washington, D. C., in April next for the examination of candidates for the Medical Corps. There are six vacancies to be filled. The circular of the Surgeon General gives full information for those desiring to compete, as to the mode of application, the conditions and requirements, the scope of the examination, etc., and as to the advantages accruing to the successful candidates. There are no more desirable positions open to young graduates than those in the Medical Corps of the Army. Among the inducements to enter the military service are a special education at the Army Medical School qualifying the individual as a sanitary officer, a permanent position with fixed duties and responsibilities, rank, pay and emoluments increasing with length of service and provision for disability from accident, sickness and old age. A set of the examination papers used by the board in session in Washington, D. C., in October last, was published in the JOURNAL of Oct. 28, 1893.

### CHOLERA IN BELGIUM.

Ten days ago it was announced that a prominent officer of Brussels had died from cholera. This meant that there were other cases there, but nothing was said about them. The disease is now reported as having appeared at Anvelais near Charlevoi, and that on January 16 twelve deaths occurred, and that many of the inhabitants have been attacked. It is safe to assume that many more cases occur and in different localities than are reported by the authorities, and the history of the past warrants the assumption that a recrudescence of the disease in many localities will take place as the temperature rises.

The very latest "remedy" for the morphin habit is potassium permanganate.

## ASSOCIATION NEWS.

**We desire** again to call attention to the official notice of the change in the date of the next meeting, to be held in San Francisco. At whatever cost of time and money, we are confident that those who make the trip, will feel themselves most amply repaid. Doubtless the best of railroad facilities will be at command and hardly a more favorable date for the meeting could be named. A very large representation from east of the Rocky Mountains should be in attendance, and to those who know the physicians of the Pacific Coast no assurance need be given of the royal hospitality with which their guests will be entertained.—*North American Practitioner*, January, 1894.

**Application Blanks for Membership.**—On advertising page v we print a convenient form of application blank that is being circulated by the ASSOCIATION JOURNAL. Any physician desirous of joining the ASSOCIATION can cut out this blank, and, having properly filled it, can mail same with his subscription to the Treasurer. As many physicians seem to be waiting for these blanks before joining the ASSOCIATION, it is pertinent to remark that the blank is not a necessity but merely a convenience. The essential is a certificate signed by the President and Secretary of a [regular] State or local Medical Society, and this, accompanied by $5, will be duly honored by the Treasurer. Dr. Kerr, the Secretary of the Medical Society of the State of California, has announced that the circulars of his Committee of Arrangements will on this occasion be mailed to every physician in the State, and will be accompanied by blank applications for membership in the ASSOCIATION. Meanwhile our readers will find each month the regular application form in our advertising columns, and we shall be at all times ready to afford any information in these matters.—*Occidental Medical Times* January, 1894.

### To the Medical Press of the United States.

The undersigned, appointed at three successive meetings of the AMERICAN MEDICAL ASSOCIATION as Chairman of a Special Committee to appeal to Congress to establish a Department and a Secretary of Public Health, begs to say, that though a formal petition to the fifty-second Congress was made to grant our prayer, yet on account of the newness of the proposition and various other adverse circumstances which were duly set forth in my report of progress to the ASSOCIATION in Milwaukee, the Congress adjourned without granting our request.

It had not been expected that such an advance movement for the promotion of the medical profession to its true rank and dignity in the State, however beneficial it would be to the public welfare, could be granted without a complete organization of the profession throughout the Nation, and an invincible purpose to sustain its claim to be represented in the Presidential Cabinet on a parity with the Departments of Finance, of War, of Justice, Agriculture and the other Departments, and I request the publication of my letter to Senator Harris of Tennessee, which will explain the attitude of the medical profession on the subject. The committee is now engaged in the preparation of the bill to be introduced into the present Congress. We are seeking to bring about a great organized movement and hope to arouse the activity of our vast profession to secure its passage. It certainly can be accomplished. We entreat the aid of the medical press to give publicity to all our publications and to sustain our cause.

Very respectfully,

C. G. COMEGYS, Chairman.

Cincinnati, Ohio, Jan. 18, 1894.

CINCINNATI, OHIO, Feb. 1, 1893.

*To the Honorable the Senator Isham G. Harris, Chairman of the Senate Committee on Infectious Diseases.*

*Dear Sir:*—I venture upon your courtesy for further con-

sideration of the petition and bill in your hands for the establishment of a Department of Public Health and a Secretary of Public Health. I earnestly request your patience to read my remarks.

I was not aware until I returned to Cincinnati that you had introduced a bill in regard to public health and that it was referred to your committee. On looking over it, I find that it is an admirable measure to secure a more thorough quarantine service; but it does not consider as extensively as the AMERICAN MEDICAL ASSOCIATION bill, other relations of the medical profession to the social conditions of the people for the prevention of sickness, growing out of their mode of living and the nature and exactions of their employments.

Prof. Dickenson of London, said in a public address fifteen years ago, that more people had been destroyed in Great Britain in one year by diseases that might have been prevented (diseases not imported) than were destroyed in France during the Reign of Terror; or during the recent Franco-German war; yet this great destruction of life by disease had created no public excitement. Nevertheless, his remarks, reinforced by a multitude of other medical writers, brought about parliamentary action that has effected, through improved sanitary measures, a great saving of life and relief of public distress. I beg to say further in regard to your bill for the establishment of a National Board of Health that there is no provision for the collection of vital statistics—marriages, births and deaths—and the relation which these events bear to conditions of prosperity or adversity of the people at large. Again, there is no provision in your bill to determine by collective investigation the primary and secondary causes and the results of medical treatment of inflammatory and fever diseases that exist in the various regions of our country. To collect this information it seems to me, is a positive duty of the general Government and which could be accomplished by a Health Department being brought into correspondence with State Boards of Health. In Great Britain such disclosures have been of great value.

In your bill no reference is made to the importance of higher medical education. There are over one hundred medical schools—of all systems—in the Union; and it may appear to you that nothing further is required; but these schools are not equally possessed of means or local opportunity to teach on the highest plane of advanced science. It is only recently that a somewhat general agreement has been reached which demands an examination for matriculation; and that the course of study in college should be lengthened to three full years. All experienced practitioners know that besides a good preliminary entrance examination, four full years are required to train a student thoroughly in general and special departments of practical medicine, in order to render him trustworthy as a practitioner. It is the desire of the medical profession that a course of instruction shall become available that will constitute physicians, everywhere, a body of learned practitioners commanding the respect and confidence of the people. It is plain that such professional qualities are of the utmost importance to the people. The influence of the Department of Public Health would greatly promote the elevation of practical instruction and bring about concord and increased efforts in all schools to accomplish the best kind of work.

I further beg your attention to the constitution of your National Board of Health, in regard to the employment of three scientific men at a salary of $5,000 each, to carry on sanitary investigations. The Government is already possessed of laboratories and men of science connected with the Military, Naval and Marine Hospitals, in the Geodetic Department of the Coast Survey and in the Department of Agriculture, sufficient to accomplish every investigation in sanitary and biological science. Moreover, in all the universities and general hospitals throughout the land, biologic and bacteriologic research is in continuous operation; and the same may be said in regard to investigations of food, water, and everything belonging to domestic economy and a healthy mode of living. If any unusual researches should be required, it would be much less expensive to employ some of these establishments to do the work, than to build new laboratories at Washington.

It is with the utmost respect for your eminent character and experience as the head of the Senate Committee on Contagious and Infectious Diseases, that I venture to ask you to so modify your bill that instead of creating a National Board of Health you make it conform to the proposition of the AMERICAN MEDICAL ASSOCIATION bill as introduced by the Hon. John Sherman. This can be done by combining all you say in your bill, in regard to the more thorough treatment of the quarantine question, with the plan of a Medical Department of Public Health and a Secretary of Public Health, and it will cost less than the one you propose. I am not certain as to the salary of a Cabinet Secretary, but it would certainly be less than that of three scientists at $5,000 a year each. The same retinue of clerks, would, I suppose, be required for either case. The Army Library and Museum Building could furnish quarters for the Health Department.

Let me ask your patience for a further consideration of the medical office in the body politic. Some are startled at the idea of a physician being made a minister of the State. Why should there be a Secretary of the Navy, of Finance, or Agriculture, etc., any more than one of Public Health? Can not any one of these Departments be as well conducted by a board of specialists as a Department of Public Health? The objectors to a Medical Secretary in the State, limit too much the functions of such an officer. He could collect all the facts connected with his profession from all the regions of this immense nation and by an interchange of ideas derive from them the most valuable suggestions on the well-being of the people. There are no citizens so closely in touch with individuals and families as the doctors; and there has descended to us through all the ages the maxim that the health of the people is a supreme law. For the medical profession to be able to exert all its benign influence on society, it must have the rank and dignity attached to it by the general Government that is so readily accorded to other Departments. It is worthy of such distinction because it is one of the most learned professions. Its methods of practical research are the same as those employed by lawyers, engineers, machinists, and in the whole range of the natural and physical sciences. It is a science of observation; while it has not the quantitative precision of mathematics, it has the qualitative that attaches to all the sciences of observation. The methods of the calculus employed in the study of the perturbations of celestial bodies are the same as those employed in the problems of pathology. In short, the clinician proceeds in his investigations regulated by the canons of logic. Hence it is that the opinions of well-trained and experienced physicians are on as high a plane of certainty as those of lawyers, judges, statesmen, engineers, architects, divines, bankers and merchants. Medicine has never been cultivated in the highest degree in nations where it has had imperfect recognition as an element in the State. In the British Empire it has always been under the watchful care of State authorities; at this time its eminent practitioners are frequently receiving the honor of knighthood; and, as evidence of its higher public importance, there is an increasing contingent of physicians in the House of Commons. The Senates of France, Italy and Germany contain some very eminent physicians; a physician is a Cabinet Minister in Italy.

Physicians like Mungo Park and David Livingstone have been explorers and pioneers of civilization. The progress of Christian missions is successful because of the physicians, women as well as men, who go with them; without their great success in curing the ailments of the uncivilized, the missions would become failures. China, Corea, India and Africa are accessible through the influence of physicians.

The progress of medicine in saving life in times of great distress is shown in the practice of midwifery. A maternity hospital of Philadelphia reports a thousand successive cases witnout a single death. The Paris Maternity Hospital reports two thousand successive cases and not a death. The discovery of antiseptic and aseptic management has accomplished this wonderful success. The deaths in surgical treatment have been very greatly reduced by the same methods; the deaths in surgical practice in hospitals for 1891 were but 3⅓ per cent. In the surgical diseases of women the rate is still less. Thus you can appreciate how enormously the volume of human grief, agony and bereavement has been assuaged. This has all been accomplished within twenty years. Pasteur of France, and Lister of England, are the two famous men who have led the van in these triumphs. One-half the children under five years of age in American cities die; it is a disgrace to our civilization. This fearful mortality can be reduced under the agency of State preventive medicine.

Let me speak briefly on the increased light which human physiology and pathology have shed on the relations of the brain and the mind. For a long time the brain has been known as the centers of sensation and motion; but only within a few years have they been located in the great mass of nervous matter,—the brain and the specialization of ter-

ritory in relation to these functions is now so defined that we know the very seat, not only of mere faculties of sensation and motion and their coördination for the execution of instinctive and purposive movements; but we can put our fingers on the exact region where exists our capacity to think—the area where sensations are shaped into concepts—where ideas are symbolized in language,—where memory holds its seat and the imagination displays its marvelous powers. All the apparatus of our animal life, the organs of respiration, digestion, circulation, excretion, the great neuro-muscular systems, is merely to sustain and develop a definite area of the periphery of the brain, which you may cover with your two hands; it is the realm of consciousness,—the plane where matter and spirit greet each other,—and the healthy life which enables a man to say: I know, that I know; I feel, that I feel; I think, that I think; it is where the consciousness of man counterpoises the immensity of the universe. Gravitation is instantaneous in its action; consciousness just as rapidly reaches from the center to the circumference of the cosmos. Who has the right to supervise this dread region but the physician? Closer than the minister of religion, or the ties of blood, he stands as the guardian of its illimitable faculties. Through medical physiologic research, psychology has been lifted above the subtle reasoning of the schoolmen into the light of a new day and is now comprehended as never before. Metaphysics is no longer a jugglery with words and phrases, but is a function of consciousness only existing in healthy brains; it is the purest and highest expression of reason and a free will and can not be displayed but by the healthy brain; it is a psychologic systemization of terms under the regulative faculty—the will,—whereby the intuitional phenomena of thought and the phenomena derived through the senses from external objects,—the ideal and the real,—the subject and the object, are brought into accord and the consciousness is freed from baleful illusions, hallucinations and delusions. The imperfect state of consciousness in unsound sleep wherein ideas flow, regulated only by their automatic association, represents an abeyance of the metaphysical function. We are led everywhere by the most grotesque, absurd and often fearful ideation, without any self-control, until further aroused, to break the spell. There is no metaphysics, or free will in dreams. The above argument, I hope you will believe, is legitimate in considering the relation to all the affairs of the social and political state founded upon the dogma that the healthy brain is necessary to free will. All abuses of appetite in eating and drinking, all violence to the brain by over-work, over-strain in excitement of any kind, deteriorates at length the health of the brain, and impairs the mind for reasonable thought and action. The business world, owing to hazardous trading or gambling, continually presents a spectacle of disaster, caused by the wear and tear in winning and losing. The questions of automatic and reasonable actions are embraced in the discussions which constitute so much perplexity in medical jurisprudence. The race of cranks that infest society are unfortunates who are deficient in brain health and are in so many ways irresponsible. They are victims of ideas which make them often dangerous to society.

I will not weary you further; but merely state that it is not for their personal aggrandizement the medical profession makes this appeal to Congress, but only for the benefit of the people. My whole purpose, however, is to show that physicians are of absolute necessity to civilization and the progress of society in all its phases; and, on account of their intimate relation to the people, should be placed in the best attitude by the State for the promotion of the health and happiness of all.

I have the honor to be your obedient servant,

C. G. COMEGYS,

Chairman of the Special Committee of the AMERICAN MEDICAL ASSOCIATION.

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# SOCIETY NEWS.

## Eleventh International Medical Congress.

*To the Editor:*—I sincerely hope you will, in behalf of those medical men who intend to visit the Eleventh International Congress (Rome, March 29), publish the accompanying circular, probably the last I shall be called upon to distribute, or as much of it as you deem proper. It contains all the particulars, which may still be of service, and in regard to which I am constantly receiving personal inquiries.

Very sincerely yours, A. JACOBI,

Chairman American Nat. Committee.

110 W. Thirty-Fourth Street, New York.

Jan. 10th, 1894.

A letter directed to the undersigned by the Secretary General of the Eleventh International Medical Congress and dated Dec. 19, 1893, contains the following communications:

"American members will pay on the English, French and Italian railways single fares for double journeys, and will obtain a reduction of 20 per cent. on fares for Italian round-trip tickets.

"The documents required for their identification will be sent to you in January, and Americans intending to visit the Congress will have to apply to you for them.

"Full particulars concerning the journeys will accompany the documents.

"Messrs. Thos. Cook & Son, London, Paris, Rome and Naples, should be applied to for accommodation and for tickets for the excursions at Rome, Naples, and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times*—for Naples, three days, including Vesuvius, Pompey, Capri, Sorrento, Castellamare, Bajae, etc.—for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

"The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc.—about 70 francs each for the three days, and 285 francs for the ten days.

"Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey."

From former communications the following are herewith quoted: The members' fee is $5, that of their wives or adult relations $2 each. Checks or money orders may be sent to Prof. L. Pagliani, Rome, Italy. Credentials have been promised in the near future. When they arrive (none were received last year), they may be too late for many who have started or are about to start. The undersigned, who is not informed of the cause of delay, proposes to supply in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. The North German Lloyd has promised to recognize them. It is suggested, besides, that a passport may increase the traveler's facilities.

Only the North German Lloyd (22 Bowling Green) and the Compagnie Générale Transatlantique (3 Bowling Green) have thought fit to grant any reduction to Congressists.

The reductions on Italian railways are available from March 1 to April 30. A. JACOBI, M.D.

110 W. Thirty-Fourth Street, New York.

Jan. 11, 1894.

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**The New Jersey** State Board of Medical Examiners met at Trenton, and were engaged in examining applicants for license on January 9 and 10. Seventeen candidates were present.

**The Schenectady County Medical Society** met January 9 for election of officers. The following were elected: President, Dr. John A. Heatly; Vice-President, Dr. D. L. Kathan; Secretary, Dr. F. V. Brownell; Treasurer, Dr. H. C. Van Zandt. Dr. W. T. Clute was elected a delegate to the annual meeting of the State Medical Association to be held in the city of Albany in February next.

**A New Neurological Society.**—The Baltimore neurologists have united in the formation of a society having social aims and the discussion of the problems of psycho-pathology and neurology. The next meeting will be held on the second

Wednesday in February, Dr. Henry M. Hurd in the chair. The place of meeting will be the Johns Hopkins Hospital. Among the charter members are Drs. G. J. Preston, H. J. Berkeley, G. H. Rohé, S. J. Fort, William Lee, E. N. Brush, H. M. Thomas and C. G. Hill.

**There** is a project on foot in Detroit to unite the different medical societies of that city in one organization. Committees from the various societies have been appointed and are now discussing the matter. It is hoped that the profession may have a building of its own.

**New York State Medical Association.**—The Tenth Annual Meeting of the Fifth District Branch of the New York State Medical Association will be held in Brooklyn on Tuesday, May 22, 1894. All Fellows desiring to read papers will please notify the Secretary, E. H. SQUIBB, M.D.
P. O. Box 760, Brooklyn.

**The New York County Medical Association** met January 15 and elected the following officers: President, Dr. S. B. Wylie McLeod, who has served three terms; Dr. Augustus D. Ruggles, Vice-President; Dr. P. Brynberg Porter, Recording Secretary; Dr. William W. Van Arsdale, Corresponding Secretary; Dr. John S. Hinton, Treasurer, and Dr. John Blake White, member of the Executive Committee for four years.

**The Regular Meeting** of the Tioga County Medical Society, N. Y., was held January 9. A large number of physicians were present, as the regular business was the election of officers for the coming year. The following officers were chosen: President, Dr. George M. Cady, Nichols; Vice-President, Dr. A. J. Harris, Candor; Secretary, Dr. I. Vreeland, Waverly; Delegate to State Society, Dr. D. S. Anderson, Owego.

**Philadelphia County Medical Society.**—The Philadelphia County Medical Society is without a second vice-president. The Society met on the night of January 17, to elect its officers for the year, and the only nominee for the second vice-presidency was Dr. Clara Marshall, Dean of the Women's Medical College. This was regarded by some of the members as an innovation as, so far, no women have been elected officers of the Society. Dr. George de Schweinitz was named against Dr. Marshall at the last moment and the vote resulted in a tie. At the next meeting, which will be held in February, the question will be finally settled.

**At the Annual Meeting** of the Camden, N. J., Medical Society January 10, the following officers were elected: President, Dr. Joseph H. Wills; Vice-President, Dr. O. W. Braymer; Secretary, Dr. Sophia Priestly; Treasurer, Dr. A. H. Lippincott; Reporter, Dr. Daniel Strock; Librarian, Dr. Joseph L Nicholson; Standing Committee, Drs. J. M. Ridge, G. E. Kirk, W. S. Bray; Legislative Committee, Drs. George W. Henry, D. W. Benjamin, J. M. Ridge. Managers for the Camden City Dispensary Association were also elected as follows: Drs. O. B. Gross, H. Genet Taylor, A. M. Mecray, J. S. Baer, E. L. B. Godfrey, George T. Robinson, W. A. Davis and J. F. Stock.

**Wayne County (Michigan) Medical Society. (Detroit)** Wednesday evening, the 17th inst., about two hundred physicians, members and friends of the Wayne County Medical Society, listened to a paper on "Peritonitis and Appendicitis," by Dr. Roswell Park, Professor of Surgery at the University of Buffalo, which the Doctor had been invited to read before the Society. The paper dealt principally with the bacteriology and pathology of peritonitis and appendicitis and was largely the product of original researches. It was discussed by Drs. Donald McLean, E. W. Jenks, E. L. Shurley, G. H. Carstens and A. N. Collins of Detroit. The whole subject of peritonitis and appendicitis, etiology, pathology and treatment, was thoroughly canvassed. At the conclusion of the discussion, a collation was served and all members and friends of the Society were given an opportunity to meet the essayist.

**Dauphin County Medical Society.**—The following officers were elected January 16, at a meeting of the Dauphin County Medical Society of Pennsylvania: President, Dr. F. W. Coover; First Vice-President, Dr. W. J. Middleton; Second Vice-President, Dr. E. H. James; Secretary, Dr. Paul Hartman; Treasurer, Dr. E. H. Coover; Board of Censors, Dr. H. McGowan, Dr. Orth, Dr. Gorgas; Board of Examiners, Dr. Hamilton, Dr. C. A. Kahter, Dr. F. W. Coover; Delegates to AMERICAN MEDICAL ASSOCIATION, Dr. W. T. Bishop, Dr. W. H. Seibert, Dr. E. H. Coover, Dr. H. McGowan, Dr. J. F. Culp; Delegates to State Medical Society, Dr. Gerhardt, Dr. W. E. Ellenberger, Dr. J. W. Roop, Dr. E. H. James, Dr. D. S. Funk, Dr. J. B. McAllister, Dr. J. F. Culp, Dr. A. T. Bishop, Dr. W. H. Jones; Trustees, Dr. H. McGowan, Dr. S. R. Gorgas, Dr. E. H. Coover; Sanitary Committee, Messrs. Hartman, McGowan, Gerhardt, F. W. Coover, Middleton, Hamilton, Ruhl, of Middleton.

**The Erie County Medical Society** held its annual meeting, January 9, when the election of officers for the current year was held, and the Society completed the revision of the by-laws, upon which it has been engaged for some time. The election of officers resulted as follows:

President—Dr. William H. Gail of East Aurora.
Vice-President—Dr. F. W. Bartlett.
Secretary—Dr. Franklin C. Gram.
Assistant Secretary—Dr. George F. Cott.
Treasurer—Dr. Edward Clark.
Assistant Treasurer—Dr. Eugene A. Smith.
Librarian—Dr. William C. Callanan.
Membership Committee—Drs. John A. Pettit, J. W. Putnam, and G. W. McPherson of Lancaster.
Censors—Drs. J. Krug, J. S. Porter, J. H. Potter, A. L. Benedict, and Henry Lapp of Clarence.
Delegate to State Medical Society—Dr. J. H. Pryor.

The revision of the by-laws was necessary because some of the sections had become obsolete through the action of the Legislature during the last ten or fifteen years, and other conditions had arisen in the same manner which were totally unprovided for.

One addition to the by-laws was the adoption of an article for a Committee on Hygiene, which is intended to act in the direction of public health, and to coöperate with the Board of Health when necessary. The following were appointed: Drs. H. R. Hopkins, Edward Clark, W. W. Potter and E. C. W. O'Brien.

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## American Electro-Therapeutic Association.

*The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.*

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 95*).

METALLIC ELECTROLYSIS.

I have often succeeded in plating the needle with metallic copper in the following manner:

After obtaining the oxychlorid of copper as just described, a perfectly clean steel needle is attached to the negative pole, and a platinum needle to the positive pole. The steel needle is then placed within the zone where the oxychlorid of copper was deposited, and the other needle inserted in another portion of the meat; it is found on removing the needle after five minutes, that it has become coated with what appears to be oxid of copper. To prove this, it is only necessary to substitute this needle for the ordinary negative element of an Edison-Lalande battery, and wait for a few minutes, when the needle will be found to be coated with metallic copper. This method is not a caustic one, as in ordinary galvano-caustic applications, simply because the organic acid set free attacks the oxidizable electrode instead of the tissues.

The synthesis of this electroiytic action, Gautier sums up in a series of physico-chemic phenomena, as follows: 1, voltaic decompositions; 2, secondary chemic actions; 3, endothelial diffusions.

The first action of the treatment, on the uterus for in-

stance, is to saturate all the uterine cavity with the newly born salt, whether of zinc, copper or iron. This is diffused into the mucous membrane, the glands, the blood vessels, and the muscular tissue of the uterine body successively. This impregnation is much more considerable, according as the current which favors the cataphoric action is high and long continued.

In living tissues, I have seen the dissemination of the copper salt very marked in the treatment of cystic degeneration of the cervix uteri by means of cupric puncture, and about the meatus urinarius in the treatment of the female urethra.

This interstitial saturation, of whose microbicidal effect there is no doubt, causes a transient congestion of the uterus. The glands become congested and empty their contents; the mucous membrane is detached in shreds, or as a whole; there is in a word, a work of elimination and repair which takes place in the neighboring tissues without pain and without inflammmatory reaction. This process extends over a period of eight days.

On the one hand, the Apostoli or galvano-caustic method, is characterized by unoxidizable electrodes, high intensities, and short sittings; while on the other, the Gautier method or metallic electrolysis, is characterized by the use of oxidizable electrodes, low intensities and long sittings.

In favor of the low intensities and long sittings, Gautier[6] refers to observations made by Heidenham, concerning the actions of prolonged applications of currents on fatigued muscles, and upon vaso-motor nerves. Heidenham has shown that to restore a fatigued muscle to its primitive vigor, prolonged applications of the continued current are necessary, and that to act upon vaso-motor nerves, treatments of long duration are necessary; and Cyon has found the same. As an argument for the use of weaker currents, he quotes the observations of the Weber brothers.[7] When they stimulated the vagus by strong currents they stopped the heart in diastole, while Pflüger and Van Bezold proved afterwards that with feeble currents to the same nerve, the heart was slowed only. The Weber brothers, instead of stimulating the nerve, exhausted and paralyzed its excito-motor action. Admitting, then, that electricity, acting on the uterus excites the terminal filaments of the sympathetic nerves which end in that organ, and that the result is stimulation of vaso-dilators or vaso-constrictors, then *strong* excitation ought to produce a *vaso-dilatation* of the large arterial region of the abdomen, while feeble and prolonged excitation would produce the opposite effect.

In gynecologic work, Gautier claims for this method, as opposed to that of Apostoli, less pain, and an abridgment of the time of treatment, with better and more lasting results.

The advantages of the method over the topical application of sulphate of copper in stick or in solution, of zinc in paste or solution, or of iron in solution are as follows:

In the first place, ability to localize the medicinal action of the metallic salt used directly upon the diseased surface. For instance, in the treatment of a deep sinus, a copper probe may be carried to the bottom and the copper salts manufactured there where most needed; 2, drugs introduced into the system in a nascent state are much more active than in chemic combination; 3, by cataphoresis the salts thus formed are driven into the tissues, rather than laid upon the surface of a mucous membrane, as in ordinary topical applications; 4, there is obtained at the same time the beneficial action of the physiologic properties of the current.

The technique of the treatment is that of any galvano-caustic application, save that necessarily the positive pole is always the active one, and for the usual electrodes there are substituted sounds and needles of copper, zinc and iron. These are the metals which seem to have the widest range of usefulness as therapeutic agents.

So far as the published reports indicate, Gautier's observations have been made with pure red copper only, but he invariably refers to the use of soluble metallic electrodes in which category may be placed iron and zinc. The latter, as well as the copper, have been used by Dr. W. J. Morton and myself in the Electro-Therapeutic Clinic of the Post-Graduate Medical School, as well as in private practice.

After each application the electrodes should be carefully rubbed with emery paper, in order to secure an unoxidized surface for the next application.

In gynecologic work, a C. S. of from twenty-five to forty or fifty milliampères should be used. This maximum intensity should not be exceeded. The first sitting should be of fifteen minutes' duration, with—according to Gautier—from six to eight minutes for reversal of the poles, using a current of five to ten milliampères in order to loosen the electrode which has become adherent to the tissues. A constant and gentle manipulation of the electrode may be safely kept up in suitable localities during the treatment, thereby preventing any adhesions, and the necessity of polar reversal.

The length of the sittings should be progressively increased up to thirty minutes or more, according to the indications, and the tolerance of the patient. Both Gautier[8] and Delineau[9] find that prolonged sittings of metallic electrolysis, twenty to thirty minutes, are much more successful in combating hemorrhage than strong currents of short duration. The latter reports that he finds the hemorrhage is usually stopped after the first sitting. Gautier also finds rapid cures from metallic electrolysis in disease of the endometrium, even in cases where gonococci have been demonstrated.

In uterine hyperplasia, in pelvic exudates, and in certain inflammations of the tubes he has also found it very effective and harmless, relieving and curing the patients. His published reports, as well as those of Delineau include uterine fibroids as well as the conditions above enumerated.

These applications should only be made three or four times a month in intra-uterine treatment. In this, as in the galvano-caustic method, results are compromised and retarded by too frequent applications. The work done as the result of this intra-uterine electrolysis with an electrode of copper is, as has been pointed out, one of congestion, elimination and repair, and as we have stated, is completed in eight days.

"The elimination of pathologic tissues being imperfect, the mucous membrane would still be adherent in some points, and would adhere to the electrode, rupturing some blood vessels, and causing a slight hemorrhage."[10]

In my own experience, I know that I have in several instances retarded my results by too frequent applications. In a case of granular degeneration of the cervix, four applications of zinc electrolysis were made, the first, second and third times at intervals of two days. A current strength of ten milliampères was used. Four days after the third application, the cervix was most deeply congested, of an intensely red color, and completely devoid of epithelium. A fourth application was made with a current strength of ten milliampères for two or three minutes. Nothing further was done in the way of local treatment until one week later. At that time I made a speculum examination, and found the cervical congestion markedly diminished, the color normal save one tiny point of redness, the secretion profuse but normal in character, and the eroded surface almost entirely covered with delicate newly-formed epithelium.

From the history obtained when the case first came under observation, as well as from the condition presented, the trouble was evidently of long standing, and it had defied all the classical measurers, as well as cupric electrolysis. In the light of my subsequent experience, I am satisfied that the second and third treatments were distinctly harmful, and that the first and fourth would have accomplished the desired result.

Dr. A. H. Goelet, President of the American Electro-Therapeutic Association, has used zinc electrolysis somewhat extensively in chronic inflammatory conditions of the uterine mucous membrane accompanied by induration and sclerosis; also in fibroid and keloid growths. He has not used it as it was used by Gröh many years ago, viz.: to destroy degenerated tissue like cancerous growths, but to obtain the characteristic action of zinc chlorid upon morbid tissue. At the June meeting of the New York Electro-Therapeutic Society, Dr. Goelet called the attention of the members to his work with zinc electrolysis, as above outlined, and reported a case of extensive keloid under observation that had markedly improved under zinc puncture.

At the same meeting, Dr. W. J. Morton referred to the action of the zinc element in body batteries upon the skin, and reported a case of keloid where this action had been utilized with a considerable degree of success, and he had previously used zinc needles.

It is not only in gynecology that metallic electrolysis is of avail, although Gautier has established it as a precise and scientific therapeutic measure more thoroughly in gynecology than in other conditions. It has also been used

6 Revue D'Electrotherapie, July, 1893.
7 Technique de Electrotherapie, page 179.
8 Technique D'Electrotherapie, page 180.
9 Revue Internationale D'Electrotherapie, September, 1892.
10 Technique d Electrotherapie Gautier et Larat, p. 222.

by him, as well as by others, in hypertrophic rhinitis, ozena, chronic coryza, nasal polypi, sebaceous cysts, chronic urethritis, hemorrhoids, anal fissure, epithelioma, cancroid and chronic conjunctivitis.

In the July number of the *Revue Internationale D'Electrotherapie*, M. M. R. Verhoogen of Brussels, reports a case of aneurism—described as an enormous vascular tumor—subjected to the action of a copper electrode. At the time of his making the report, no result had been noted.

Twenty months ago, Dr. W. J. Morton, Professor of Electro-Therapeutics at the Post-Graduate Medical School and Hospital of New York City, began the use of metallic electrolysis in his clinic. At that time a typical case of trachoma, affecting both eyes, and of many years' duration, was treated by means of cupric electrolysis. About the same time the same method was used in ozena, as well as in many other cases.

A little later, a vascular tumor at the angle of the mouth received two applications of metallic electrolysis. A steel needle was thrust into the tumor, and there was secured the styptic action of the oxychlorid of iron upon the blood circulating therein. At the first sitting, a current of fifteen milliampères was passed for ten minutes, and at the second, twenty-five milliampères for ten minutes. The tumor, which before treatment had a diameter at the base of three-quarters of an inch, was reduced to one-third its former size. Almost complete destruction of the part of the needle buried in the tumor ensued. With the greater C. S., reversal of the poles was necessary to loosen the needle, and prevent tearing of the tissues.

The entire system of metallic electrolysis with all the soluble metals, and even with plated metals, has been systematically and continuously taught to the Post-Graduates, since its first announcement in this country, now some two years ago. Personally, I have used it in hypertrophic rhinitis, trachoma, urethritis, endometritis, uterine, fibroids, granular degeneration of the cervix uteri and cystic degeneration, with gratifying success.

I append a few cases taken from my case-book, and from that of the Electro-Therapeutic Clinic of the Post-Graduate Medical School and Hospital of New York City.

*Case 1.*—Miss O. D. presented herself for the treatment of a hypertrophic condition of the nose and throat which had existed for three years. Her voice was thick, and she complained of an irritative cough, and a disposition to swallow almost constantly. Six applications of cupric electrolysis with a current of ten milliampères were made, and on June 9 it was noted that all her symptoms had disappeared. She has remained well ever since.

*Case 2.*—A. R., 9 years of age, came under observation Oct. 21, 1892, because of a profuse muco-purulent discharge from the nose, and the usual symptoms attendant upon nasal and pharyngeal obstruction. The trouble had lasted one year. Fourteen intra-nasal applications of cupric electrolysis were made, their duration being five minutes, and the current strength five to ten milliampères. After the second application, he slept all night without snoring, and there was a steady and gratifying improvement, both in his local and general condition.

*Case 3.*—Miss G. A., 26 years of age; had had for several years a nasal stenosis on the right side, and inflamed and hypertrophied tonsils. Fifteen applications of cupric electrolysis were made to the nasal passages between April 25 and June 30, 1893, a current of ten or fifteen milliampères being used for five to ten minutes at a time. After the fifth sitting her voice became so much clearer that she was able to sing again. Negative galvanism, five milliampères was then successfully employed to overcome the nasal stenosis. By July 18, her voice had become strong and clear, and the other symptoms proportionately improved. In this case, as in the foregoing, attention was paid to the general nutrition.

*Case 4.*—M. J. C., was treated by the same method for the relief of symptoms due to marked nasal stenosis, arising from a double deviation from the septum. With a current of ten to fifteen milliampères, applications were made to the anterior and posterior nasal passages, and after two sittings there was complete relief from the post-nasal dropping and cessation of the muco-purulent discharge.

*Case 5.*—N. R., 11 years of age; for two days before coming under observation had a purulent conjunctivitis. Examination showed trachoma of the upper and lower lids of both eyes. Six applications of cupric electrolysis with a current of two milliampères were made for one minute to each lid. After the first treatment, there was less photophobia, and the granular points were decidedly smaller. The patient completely recovered and there has been no relapse.

*Case 6.*—F. D., age 8; with double trachoma, was brought from an institution where there were twenty-four boys, "all with sore eyes." He had purulent conjunctivitis with congestion and edema of the surrounding tissues, and the lower lids were covered with enlarged conjunctival papillæ, the upper showing the frog-spawn granulations very markedly. Treatment was begun July 21, 1893. Five applications of cupric electrolysis were made in this case by means of an oval copper electrode, which I show here, insulated on one face to prevent its coming in contact with the edge of the lid, as there is danger of this when the pain becomes severe, and the lids gradually contract and retract. A C. S. of from three to seven milliampères was used from three to five minutes. A solution of cocain was dropped in the eye prior to the application. The treatments were given at intervals of three, twelve, eleven and nine days. After the first treatment, less soreness, lacrymation and photophobia were present, and the trachomatous bodies were much softer. Recovered.

*Case 7.*—E. G., 21 years of age; right trachoma. This case and the preceding one were referred to the Electro-Therapeutic Clinic of the Post-Graduate Medical School by Dr. Francis Valk, Department of Ophthalmology in the same school. Photophobia and lachrymation were excessive, and the history dated back a year, during all of which time there had been lachrymation and pain. There was marked ptosis of the right upper lid from the congestion and swelling, and the "sago-grains" were abundant on the lids. There was also extensive inflammation of the cornea.

On July 21, 1893, cupric electrolysis was used to the upper and lower lids of the right eye with a current of three milliampères for five minutes.

July 24. The patient says he is better; no pain, swelling of lid and ptosis much diminished. Less photophobia, soreness and lacrymation. Trachomatous bodies very much softer; not so much like grit under electrode. Cupric electrolysis, ten milliampères from two to three minutes.

July 26. Edema of lids has entirely disappeared; slight ptosis only; no lacrymation; trachomatous bodies no longer isolated; cornea almost entirely clear; not using atropin any more.

Application repeated as on the 24th and again on the 28th.

July 31. After the fourth treatment, the trachomatous bodies were found to have melted away into the conjunctival membrane, and the other symptoms were still further diminished. He was seen by Dr. Valk, who stated that the result was 50 per cent. better than he could have secured with the classical methods of treatment. Cornea perfectly clear. Six other applications were made in the same way. The patient was not seen for nearly four weeks, and was then entirely free from symptoms, except some conjunctival redness and slight sensitiveness to bright sunlight.

*(To be Continued.)*

## CORRESPONDENCE.

### Medico-Chirurgical College of Philadelphia.

PHILADELPHIA, PA., Jan. 17, 1894.

*To the Editor:*—Please insert the following in the news column of your JOURNAL: The Faculty of the Medico-Chirurgical College of Philadelphia, has created three new clinical chairs, viz.: genito-urinary surgery, orthopedic surgery and otology. These together with the vacancy in the chair of clinical medicine will be filled permanently at the end of the present session.

Thanking you in advance, I am,

Very truly yours, ERNEST LAPLACE, Dean.

### Squelching a Quack.

JERSEYVILLE, ILL., Jan. 20, 1894.

*To the Editor:*—The State Board of Health, through Judge O. B. Hamilton, brought suit in this city against one "Dr." Fred Blankner who was traveling through this region advertising himself and wife as the "champion tooth pullers of the world," by flaming posters and advertisements in the local papers. This interesting couple also sold electric belts and "yaw soap" which last was recommended as an unfailing cure for sundry and divers diseases. A judgment was recovered

against the defendant for $100 and costs, with an order that he stand committed in custody until fine and costs were paid. The wily faker took the train for St. Louis before the jury returned their verdict, and so he is still at large.

The technical charge against him was that of violation of Section 11 of the Medical Practice Act, Chap. 91 R. S. of Illinois, as an itinerant vendor of drugs, without license from the State Board of Health.

The squelching of this quack will doubtless prove beneficial. Yours truly, MEDICUS.

## MISCELLANY.

**Circumcision.**—A bill has been introduced into the Ohio Legislature forbidding circumcision.

**Dr. Enoch V. Stoddard** was nominated January 11 by Gov. Flower to succeed the late Oscar Craig as a member of the State Board of Charities of New York.

**A Centenarian who Smoked.**—Miss Hulda Arnold died at Milford, Mass., last week, at the reputed age of over 104 years. At the age of 14 she began smoking to relieve the asthma, and thereafter was an inveterate smoker.

**Mathews' Medical Quarterly.**—We have received the first number of this interesting publication, which is "a Journal devoted to Diseases of the Rectum, Gastro-Intestinal Disease, and Rectal and Gastro-Intestinal Surgery." Joseph M. Mathews, M.D., of Louisville, is editor and proprietor, and Henry E. Tuley, M.D., is his associate. The Quarterly is in every way excellent.

**Physician to the Preston Retreat.**—Dr. Richard C. Norris was elected physician in charge of the Preston Retreat, Philadelphia, to succeed Dr. Joseph Price on January 16. Among the candidates for the place was Dr. Anna Fullerton of the Woman's Medical College. There were several members of the Board of Managers whose wives were very ardent in their support of Dr. Fullerton, and as the result of their efforts she received five votes. Dr. Norris is a graduate of the University of Pennsylvania and since 1889 occupied the position of Demonstrator of Obstetrics in that institution.

**A New Way to Execute Criminals.**—A bill has been introduced in the Legislature of Ohio opposing hanging and providing that all murderers sentenced to death shall be put out of the way by means of anesthetics which are to be administered under the supervision of a board of physicians and scientists. The condemned man having been placed in a painless sleep, the scientists are to be permitted to take the top of his skull off and watch the actions of the brain and lay bare his heart and other organs and study life there.

The author of the bill is a physician and argues that its passage would give scientists an opportunity to study the currents of life as they have never been studied before, and would undoubtedly result in the most wonderful discoveries to the benefit of humanity.

**"The Sulphate of Electricity."**—The so-called "science column" of one of our daily papers is responsible for a statement that a spring, and its effluent water, may be charged with electricity. The item reads as follows:

"During the prevalence of a thunder storm in the neighborhood of Seis, in the Tyrol, the lightning struck a heap of old wood which was piled on a rock, splitting the latter and setting fire to the former. When the flames had been extinguished it was noticed that a stream of water flowed from amid the rubbish. Further examination showed that the stream proceeded from the lightning-created cleft in the rock, and chemic analysis demonstrated that the water was impregnated with iron and magnetism in the form of sulphates."

### Hospital Notes.

**Hamot Hospital Association.**—The annual meeting of the Hamot Hospital Association, (Pa.) was held January 9 for the election of officers for the ensuing year.

**New Ward for the Episcopal Hospital.**—The new surgical receiving ward, which is being built for the Episcopal Hospital of Philadelphia, is approaching completion. The surgeons were cramped for room before it was decided to build the present addition, which is being built in a style and of material to conform with the Hospital buildings.

**German Hospital Election.**—At the meeting of the Chicago German Hospital Association, January 18, the following officers were elected: President, Frank F. Henning; Vice-President, John Kolnig; Secretary, John C. Burmeister; Directors, Adolph Sturm, two years; D. Pakentrus and Henry Herman, three years.

**St. Joseph's Hospital.**—The annual meeting of the staff of St. Joseph's Hospital, Denver, Colo., was held January 10 in the new building. The following officers were elected: President, Dr. L. E. Lemen; Vice-President, Dr. C. B. Burns; Secretary, Dr. C. E. Walker; Executive Committee, Drs. L. E. Lemen, A. L. Lobingier, W. W. Grant and Hugo Mager.

**The Virginia Hospital** at Richmond, was formally opened January 11. This institution, the outgrowth of the public spirit of some of Richmond's most prominent citizens, was erected at a cost of $18,000, and is now completely equipped. Dr. Hunter McGuire is President, Major Lewis Ginter, Vice-President, and Dr. Hugh Taylor, Secretary and Treasurer.

**Presbyterian Hospital.**—At the annual meeting of the corporation of the Presbyterian Hospital of Philadelphia, the following Trustees were elected to serve three years: Rev. Dr. Charles A. Dickey, Frank K. Hipple, Rev. James D. Paxton, Charles H. Mathews, Thomas B. Wanamaker, Rev. Dr. J. R. Miller, Henry N. Paul, Andrew Blair, Charles F. Hazletine and William A. Patton. The officers elected were: President, Dr. Dickey; Treasurer, Frank K. Hipple; Secretary, John H. Converse; Solicitor, Charles H. Mathews.

**Germantown Hospital.**—At the twenty-fourth annual meeting of the Board of Managers and contributors to the Germantown Hospital, Pa., the following officers were elected for the ensuing year: President, William H. Haines; Secretary, Thomas B. Horner; Treasurer, Joseph M. Shoemaker; Managers, Galloway C. Morris, Jones Wister, William H. Scott, Elliston P. Morris, Owen J. Wister, M.D., William E. S. Baker, William Hacker, Frank J. Firth, Francis Stokes, Reed A. Williams, Jr., Alexander W. Wister.

**The Adirondack Cottage Sanitarium.**—The ninth report of this institution shows that 156 patients were under treatment for pulmonary tuberculosis during the year 1893. Of that number 68 are now under observation, 86 have been discharged and two have died at the Sanitarium. One of the latter was complicated with pneumonia. There were 27 cases treated by tuberculin or modified tuberculin with improved conditions in ten of the cases and no deaths. Seven of these cases lost weight, while six gained weight at the rate of eight pounds, average, per patient. In three cases no bacilli or no expectoration were noted when the treatment was concluded. The report is written by Dr. E. L. Trudeau, President of the Board of Direction, who acknowledges his indebtedness to Dr. Irwin Hance, the present Resident Physician, in carrying out the exacting details of this plan of treatment. The results in some of the cases thus treated, in former years, are noted in the following paragraph: It is to be noted that ten of these thirteen cases belonged to the "advanced" or "far advanced" class, which are generally beyond the reach of treatment, and to many of these the tuberculin was administered at their own request as a last resort. Of the six cases treated by this method at the institution and hitherto reported as discharged cured, five, which have remained at home during periods varying from one to two years, are known up to date to have shown no signs of relapse, and the sixth can not be traced.

**The Naval Hospital of New York Harbor.**—The hospital at the Brooklyn Navy Yard is stated to have some objectionable, if not dangerous, features. It has been allowed to drift along like an old-fashioned sailing craft, but Rear-Admiral Gherardi proposes now, if he can get the fuel, to get up steam. A bill without which no form of animated nature can subsist now-a-days has been introduced in Congress for the modernization and extension of the old building. If this bill becomes a law the Secretary of the Navy will be empowered to put the hospital in thorough repair and to build, equip and maintain additional sick quarters of modern construction and fitted with all modern hospital appliances.

**Toledo Hospital.**—The Board of Trustees of the Toledo, Ohio, Hospital held a meeting January 15, and elected the following officers for the coming year: President, Mrs. S. C. Schenck; First Vice-President, Mrs. W. S. Thurston; Second Vice-President, Mrs. S. W. Nettleton; Recording Secretary, Mrs. A. E. Scott; Corresponding Secretary, Mrs. J. G. Gould; Treasurer, Mrs. H. H. Perrin. The following Advisory Staff was chosen: Messrs. Richard Waite, Chairman; S. C. Schenck, W. H. Scott, A. L. Spitzer, W. S. Thurston, F. O. Paddock, W. V. Barbour, J. H. Bronson, T. J. Brown, W. J. Walding, M. A. Scott, G. H. Ketcham, I. N. Poe, F. B. Shoemaker, C. H. Buck, James Secor, Clarence Brown, J. H. Bowman, W. E. Terhune and T. H. Walbridge.

## THE PUBLIC SERVICES.

### Circular of Information for Candidates Seeking Appointment in the Medical Corps of the United States Army.

The Medical Corps of the Army consists of a Surgeon-General with the rank of brigadier general, six Assistant Surgeons General with the rank of colonel, ten Deputy Surgeons General with the rank of lieutenant colonel, fifty Surgeons with the rank of major, and one hundred and twenty-five Assistant Surgeons with the rank of 1st lieutenant, mounted, for the first five years, and the rank of captain, mounted, thereafter until promoted to major. Promotion through the intermediate grades of rank from that of captain to that of colonel is by seniority, but there is an examination for the rank of captain and another for that of major, to ascertain the fitness of the officer for promotion. Advancement to lieutenant colonel and colonel takes place without further examination. The Surgeon-General is selected by the President from among the members of the Corps. All vacancies are filled by appointment to the junior grade.

Pay and Emoluments.—To each rank is attached a fixed annual salary, which is received in monthly payments, and this is increased by 10 per cent. for each period of five years' service until a maximum of 40 per cent. is reached. An Assistant Surgeon with the rank of 1st lieutenant, mounted, receives $1,600 per annum, or $133.33 monthly. At the end of five years he is promoted to captain and receives $2,000 a year, which, with the increase of 10 per cent. for five years' service, is $2,200, or $183.33 per month. After ten years' service he receives $2,400, after fifteen years $2,600, and if he remains a captain after twenty years, $2,800 per year. The pay attached to the rank of major is $2,500 a year, which, with 10 per cent. added for each five years' service, becomes $3,250 after fifteen years and $3,500 after twenty years. The monthly pay of lieutenant colonel, colonel, and brigadier-general is $333.33, $375, and $458.34 respectively. Officers addition to their pay proper are furnished with a liberal allowance of quarters according to rank, either in kind, or, where no suitable Government building is available, by commutation. When travelling on duty an officer receives four cents per mile and reimbursement of money actually expended for railroad or other fares. On change of station he is entitled to transportation for professional books and papers and a reasonable amount of baggage at Government expense. Mounted officers, including all officers of the Medical Corps, are provided with forage, stabling, and transportation for horses owned and actually kept by them, not exceeding two for all ranks below a brigadier. Groceries and other articles may be purchased from the Commissary and fuel from the Quartermaster's Department at about wholesale cost price. Books and instruments are supplied in abundance for the use of medical officers in the performance of their duties.

Army Medical School.—By a recent order the Secretary of War has authorized the establishment of an Army Medical School in the city of Washington for the purpose of instructing approved candidates for admission to the Medical Corps of the Army in their duties as medical officers.

The course of instruction will be for four months, and will be given annually at the Army Medical Museum, in Washington City, commencing on the 1st day of November.

Five professors have been selected from among the senior medical officers of the Army, stationed in or near the city of Washington, and as many associate professors as may be required to give practical laboratory instruction in the methods of sanitary analyses, microscopical technique, clinical microscopy, bacteriology, urine analysis, etc.

The faculty of the Army Medical School will consist of—

1. A *President of the Faculty*, who shall be responsible for the discipline of the school, and who will deliver a course of lectures upon the duties of medical officers in war and peace (including property responsibility, examination of recruits, certificates of disability, reports, rights and privileges, customs of service, etc.).
2. A *Professor of Military Surgery* (including the care and transportation of wounded).
3. A *Professor of Military Hygiene* (including practical instruction in the examination of air, water, food, and clothing from a sanitary point of view).
4. A *Professor of Military Medicine*.
5. A *Professor of Clinical and Sanitary Microscopy* (including bacteriology and urinology).

Duties and Privileges.—A medical officer after completing the course of instruction at the Army Medical School will be assigned for some months as junior at a large military post before he is thrown upon his own responsibility. His stations after that are likely to alternate between the frontier and more desirable points, a tour of duty being usually four years at one place.

Leave of absence on full pay is allowed at the rate of one month per year, and this when not taken may accumulate to a maximum of four months, which at the end of four years is then available as one continuous leave. Beyond this an officer may still be absent with permission on half pay. Absence from duty on account of sickness involves no loss of pay.

Medical officers are entitled to the privilege of retirement at any time for disability incurred in the line of duty, or after forty years' service. On attaining the age of sixty-four they are placed upon the retired list by virtue of law. Retired officers receive three-fourths the amount of their pay proper at the time of retirement.

It is the intention of the Surgeon General to recommend the assignment for duty, as attending surgeons in the principal medical centers of the United States, of medical officers who have not yet passed their examinations for promotion to a majority, and, so far as may be practicable, in the order of their seniority. These details will be made for one year only, in order that as many medical officers as possible may be enabled to avail themselves of the opportunities thus offered to become familiar with the practice of the leading physicians and surgeons in this country, and of attending medical lectures, meetings of medical societies, etc. At the end of this tour of duty medical officers will be required to make a detailed report to the Surgeon General, showing how much of their time has been occupied by their official duties and to what extent they have availed themselves of the advantages offered for professional advancement.

Examination and Appointment.—Appointments to the Medical Corps of the Army are made by the President after the applicant has passed a successful examination before the Army Medical Examining Board and has been recommended by the Surgeon-General. Due notice of the meeting of the Board is usually published in the medical journals. The date of meeting is about April and October. Permission to appear before the Board is obtained by letter to the Secretary of War, which musst be in the handwriting of the applicant, giving the date and place of his birth and the place and State of which he is a permanent resident, and inclosing certificates based on personal acquaintance from at least two reputable persons as to his citizenship, character and habits. The candidate must be a citizen of the United States, between twenty-two and twenty-eight years old, of sound health and good character, and a graduate of some regular medical college, in evidence of which his diploma will be submitted to the Board. The scope of the examination will include the morals, habits, physical and mental qualifications of the candidate, and his general aptitude for service; and the Board will report unfavorably should it have a reasonable doubt of his efficiency in any of these particulars.

The physical examination comes first in order, and must be thorough. Each candidate will in addition be required to certify "that he labors under no mental or physical infirmity or disability of any kind which can in any way interfere with the most efficient discharge of any duty which may be required." Errors of refraction, when not excessive, and not accompanied by ocular disease, and when correctible by appropriate glasses, are not causes for rejection.

The mental examinations are conducted by both written and oral questions, upon—

I. Elementary branches of common school education, including arithmetic, the history and geography of the United States, physics, and upon general literature and ancient and modern history. Candidates claiming especial knowledge of the higher mathematics, ancient or modern languages, drawing, analytical chemistry or branches of natural science, will be examined in those subjects as accomplishments and will receive due credit therefor according to their proficiency.

II. Professional branches, including anatomy, physiology, chemistry, physics, hygiene, pathology and bacteriology, therapeutics and materia medica, surgery, practice of medicine, obstetrics and the diseases of women and children.

Examinations at the bedside will also be conducted in clinical medicine and surgery, and operations and demonstrations upon the cadaver.

Hospital training and practical experience in the practice of medicine, surgery and obstetrics, are of great importance to candidates seeking admission to the Medical Corps of the Army, and they will be fully appreciated and duly credited to those who have had such advantages.

The Board has discretion to deviate from this general plan of examination in such manner as it deems best when necessary for the interests of the Service.

To save unnecessary expense to candidates, those who desire it may have a preliminary physical examination and a mental examination in the "elementary branches of a common school education," by a medical officer of the Army stationed most conveniently for this purpose, who will act under instructions from the Medical Examining Board.

The merits of the candidates in each of the several branches, and also their relative merit as evinced by the results obtained from the entire examination, will be reported by the Board, and in accordance with this report approved candidates will be appointed to existing vacancies or to such as may occur within two years thereafter. An applicant failing in one examination may be allowed a second after one year, but not a third. No concession will be made for the expenses of persons undergoing examination, but those who receive appointments will be entitled to travel allowances in obeying the first order assigning them to duty.

There will probably be six vacancies in the Corps to be filled.

To illustrate the general character of written questions submitted to candidates under examination, a few examples from the records of an Army Medical Examining Board recently convened in the city of New York are hereto appended. Geo. M. Sternberg, *Surgeon General*.

Approved: Daniel S. Lamont, *Secretary of War*.

War Department, Surgeon-General's Office,
Washington, D. C., Jan. 2, 1894.

#### EXAMPLES OF WRITTEN QUESTIONS.

ARITHMETIC.

1. Find the interest on $400.00 for 2 years, 5 months and 25 days at 8 per cent. per annum.
2. Find the depth of a reservoir 12 feet square from which 336 cubic yards of earth has been removed.
3. How many grains are there in 184 milligrams?
4. What is $\sqrt{\frac{5}{7}}$ carried to four decimal places?
5. What is $3\frac{1}{4} \times 15\frac{5}{7} + \frac{2}{3\frac{1}{4}} \div \frac{2\frac{3}{4}}{3}$ ?
6. The shadow of a church tower extends 57 yards; what is the heihtg of the tower when the shadow of a 2-foot rule in a vertical position extends 2 feet, 9 inches?

GEOGRAPHY.

1. Which of the United States are bounded in part by the Atlantic Ocean?

2. What are the principal mountain ranges in the western part of the United States?
3. What rivers of North America flow into the Pacific Ocean?
4. Bound the States of Michigan and New Hampshire.
5. Over what waters would a vessel pass in sailing from Washington to Sebastopol, by the shortest route?
6. When it is 12 o'clock, noon, standard time, in New York City, what is the standard time in San Francisco? Describe the system of "time belts" in the United States.

HISTORY AND LITERATURE.

1. Which were the two first permanent English colonies in North America? When, where, and by whom were they established?
2. Name the thirteen original States of the Union in the order in which they were settled.
3. What were the principal causes that led to the Revolutionary war in this country?
4. What poems have especially distinguished the following poets: Virgil, Milton, Young, Gray, James Thomson, and Goethe?
5. Under what Roman emperor was the capital of the empire removed from Rome, and what city became the new capital?
6. Name the principal battles fought in the Persian invasion of Greece by Xerxes.
7. Name the kings and queens of England embraced in the line of Tudor.

CHEMISTRY.

1. State the "law of multiple proportions." When was it discovered?
2. Give the symbols and atomic weights of the bivalent, non-metallic elements.
3. What are the physical and chemical properties of the element represented by the symbol Sb, and by what tests may it be recognized?
4. What do you understand by the following formula: $Fe_2\,3SO_4 + 6NH_4HO = 3[(NH_4)_2SO_4] + Fe_2(HO)_6$?
5. What is the formula for ethyl ether, and how is it prepared?
6. What substance is represented by the formula $C_6H_{12}O_6$? Where is it found in nature, what are its physical characters, and by what chemical tests may it be recognized?

PHYSICS.

1. What is weight? Is the weight of a body constant? If not, why does it vary?
2. What is osmosis? What conditions are necessary to osmotic action? Give an illustration from the human body.
3. How is dew formed? What circumstances influence its formation? What is meant by the dew point?
4. Upon what fundamental laws of light does the action of lenses depend? Why does a convex lens magnify?
5. What is the velocity of sound? Does it vary, and how?
6. What is the relation between the dynamo and the electric motor? What is the principle of the dynamo?

ANATOMY.

1. Give the anatomy of the fourth ventricle, including the origin of nerves.
2. Give the anatomy of the coracoid process.
3. Make a diagrammatic sketch showing the relation of parts in a cross-section through the middle third of the right arm, proximal surface.
4. Describe the internal pudic artery and its relations.
5. Give a short description of the minute structural anatomy of the kidney, with or without schematic diagram.

PHYSIOLOGY.

1. Tell what you know about the cerebral localization of the functions of motion and locate some of the so-called motor areas.
2. What are the functions of the thyroid gland and the consequences of its removal?
3. What is the composition of atmospheric air and of expired air?
4. Give a list and a short description of some of the animal albuminoids.
5. What is urea? What is the normal quantity in proportion to body weight? How is it estimated?

SURGERY.

1. Give in detail the preparatory and several following steps of a so-called aseptic surgical operation.
2. What is the nature and origin of pus? What is sepsis and also antisepsis?
3. Describe Chopart's amputation through the foot, with diagram.
4. Give the points of diagnostic differentiation in cases of lupus ulceration, syphilitic ulceration, and epithaliomatous ulceration.
5. Describe the different methods of procedure for the reduction of luxations of the head of the femur.

HYGIENE.

1. What is the normal amount of $CO_2$ in the atmosphere, how much of this gas is considered admissible in inhabited apartments, and how is the amount determined?
2. What amount of cubic air space per bed would you consider a suitable allowance in a hospital ward?
3. What substances in well or river water indicate, by their presence, contamination from excreta or other organic matter of animal origin?
4. How is the hardness of water estimated and to what is it due?
5. What are the constituent alimentary substances in milk, and how does cow's milk differ from human milk?
6. What vegetable products used as food contain the largest proportion of carbo-hydrates and what the largest proportion of proteids?
7. What parasites dangerous to man may be present in the flesh of animals used as food?
8. How would you disinfect the excreta of patients sick with cholera or typhoid fever?

PATHOLOGY AND BACTERIOLOGY.

1. What are the different stages of exudative inflammation and what the products of such inflammation?
2. What are the causes of thrombosis, what the composition and varieties of thrombi, and what changes they may undergo?
3. What pathological changes are found in the spinal cord in posterior spinal sclerosis?
4. What changes occur in the liver as a result of chronic interstitial hepatitis?
5. What bacteria are commonly found attached to the diseased valves in mycotic endocarditis?
6. What are the morphological and biological characters of the bacillus of diphtheria, and what are the evidences of its etiological relation to this disease?

THERAPEUTICS, MATERIA MEDICA, AND TOXICOLOGY.

1. By what various agents may antipyresis be produced? Give an example of each class of antipyretics and state how it acts.
2. In a case of typical acute pleurisy state the indications for treatment in its several stages and how *you* would meet them.
3. What is salol? Give its physiological action and therapeutic uses.
4. Give the source and therapeutic uses of cocaine, the dose in each case, and its dangerous effects.
5. With what condition is poisoning from opium most likely to be confounded? How would you make a diagnosis and how treat such a case?
6. What are the poisonous effects of the lead salts? How is their presence detected? State briefly *your* plan of treatment.

PRACTICE OF MEDICINE.

1. Give an account or the etiology, symptoms, physical signs, and differential diagnosis of lobular pneumonia.
2. Give an account of the etiology, physical signs, and treatment of empyema.
3. Give an account of the etiology, symptoms, differential diagnosis, and treatment of dilatation of the stomach.
4. What are the causes and symptoms of intestinal obstruction and what is the treatment?
5. What are the causes and results of mitral stenosis and how would you recognize this condition?
6. Give the differential diagnosis between smallpox and measles.

OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

1. Describe briefly the usual mechanism of a breech presentation; what dangers are to be guarded against and what difficulties to be met?
2. Under what circumstances is premature delivery demanded and how would you perform it?
3. What symptoms would lead you to suspect the presence of a uterine fibroid? State how an exact diagnosis can be made in such cases.
4. What measures, preventive or remedial, would you use in a case of puerperal convulsions?
5. What early symptoms indicate probable onset of the chief eruptive fevers in children? In which does temperature range highest, which has the shortest period of incubation, of invasion, of eruption?

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**Army Changes.** Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from January 13, 1894, to January 19, 1894.

Major EDWARD B. MOSELEY, Surgeon U. S. A., is hereby granted leave of absence for one month, on surgeon's certificate of disability.

**Navy Changes.** Changes in the Medical Corps of the U. S. Navy for the week ending January 20, 1894.

Surgeon CLEMENT BIDDLE, detached from duty, Marine Rendezvous, Philadelphia, Pa., and wait orders. Rendezvous closed.
P. A. Surgeon E. P. STONE, detached from Marine Rendezvous, Boston, Mass., and continue on special duty in Boston, Mass.
P. A. Surgeon T. A. BERRYHILL, authorized to take a course of instruction at the Naval Hospital, Brooklyn, N. Y.
Medical Director J. MILLS BROWNE, retired, granted two months' leave of absence, with permission to go abroad.

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## LETTERS RECEIVED.

(A) Anders, J. M., Philadelphia, Pa.; Anderson, J. D., Minneapolis, Minn.; Andrews, J. B., Buffalo, N. Y.; Atkinson, W. B., Philadelphia, Pa.
(B) Beverly, H. H., Smiley, Texas; Brooke, G. W., Ellsworth, Ohio; Boylan, J. E., Cincinnati, Ohio; Billings, Caroline, Barre, Mass.; Billings, John S., Washington, D. C.; Bridge, Norman, Los Angeles, Cal.; Beakley, J. R., Alma Center, Wis.; Blackwell, Emily, New York City; Brown, C. F., St. Peter, Minn.; Bartlett, Edwin S., Milwaukee, Wis.; Baker, A. R., Cleveland, Ohio; Blyes, F. G., Fredonia, Pa.; Baker, E. F., Jacksonville, Ill.; Beardsley, C. E., Ottawa, Ohio; Bernd & Co., St. Louis, Mo.; Bevan, A. D., Chicago, Ill.; Bosqui, F. L., San Francisco, Cal.
(C) Cleaves, M. A., New York City; Church, Archibald, Chicago, Ill.; Collins, H. L. Company, St. Paul, Minn.; Coulter, C. E., Ogden, Utah; Clifford, E. L., Chicago, Ill.; Comegys, C. G., Cincinnati Ohio.
(D) Duncan, W. E., Aberdeen, S. Dak.; Davis, T. A., Chicago, Ill.; Dudley, A. Palmer, New York City; Dodd's Newspaper Adv. Agency, Boston, Mass.; Dunglison, R. J., Philadelphia, Pa., 2; Davisson, J. H., Los Angeles, Cal.
(E) Engelmann, Rosa, Chicago, Ill.; Ermold, George, New York City. Eagleston, J. B., Seattle, Wash.
(F) Fox, William, Milwaukee, Wis.; Fann, George C., Kelley's Island, Ohio; Fox, T. B., Jesuits Bend, La.
(G) Gutmann, Joe, St. Paul, Minn.; Gapen, Clarke, Kankakee, Ill.; Goelet, A. H., New York City.
(H) Hare, H. A., Philadelphia, Pa.; Hogan, S. M., Union Springs, Ala.; Holton, Henry D., Brattleboro, Vt.; Hummel & Parmele, Philadelphia, Pa.; Hull, Edward M., Washington, D. C.; Holland, J. W., Philadelphia, Pa.; Hare, H. A., Philadelphia, Pa.; Howle, W. P., Oran, Mo.; Hamburg-American Packet Co., New York City; Hearne, J. C., San Diego, Cal.
(I) Ingals, E. F., Chicago, Ill.
(K) Kennedy, Robt., New York City.
(L) Landon, W. M., Fowler, Ill.; Linden, Frank C., Chicago, Ill.; Leisenring, H. G., Wayne, Neb.
(M) McKee, E. S., Cincinnati, Ohio; McMurtry, L. S., Louisville, Ky.; McBride, J. H., Wauwatosa, Wis.; McCoy, Wm. A., Madison, Ind.; McClellan, H. R., Xenia, Ohio; Moore's Newspaper Subscription Agency, Brockport, N. Y., 2; Medical Echo Publishing Co., Lynn, Mass.; Murphy, Franklin E., Kansas City, Mo.; MacGowan & Cooke, Chattanooga, Tenn.; Medical Department, Mutual Life Ins. Co., New York City; Mackintosh, M. A., Paterson, N. J.; Montgomery, E. C., Philadelphia, Pa.; Millard, P. H., (2) St. Paul, Minn.
(N) Newman, Robt., New York City.
(O) Ohmann-Dumesnil, A. H., St. Louis, Mo.
(P) Parke, Davis & Co., Detroit, Mich., 2; Putney, W. G., Sevena, Ill.; Penfield, R. C., Philadelphia, Pa.; Peacock Chemical Co., St. Louis Mo.
(R) Rogers, S. F., Troy, N. Y.; Reeve, J. C., Dayton, Ohio; Reyburn, Robt., Washington, D. C.; Robinson, F. Byron, Chicago, Ill.; Randan, F. D., Malden, Mass.; Rutherford, F. A., Grand Rapids, Mich.; Rauch, John R., Lebanon, Pa.
(S) Smith, A. R. G., N. Whitefield, Maine; Steiger, E. & Co., New York City; Selden, Julia, Norfolk, Va.; Smith, Prescott, Cincinnati, Ohio; Simpers, I. N., Germantown, Md.; Sharp, J. S., Salt Lake City, Utah.; Sutton, R. S., Allegheny, Pa.
(T) The Maltine Mfg. Co., New York City; Treat, E. B., New York City; Tillier, F., St. Paul, Minn.; The Subscription News Co., Chicago, Ill.; The C. K. Mathis Bindery, Dubuque, Iowa; Thompson, W. H., Sullivan, Ind.; Topliff, C. L., New York City.
(V) Van Hook, Weller, Chicago, Ill.
(W) Wilber, A. M., West Unity, Ohio; Winn, J. J., Norwood, Ohio. Will, O. B., Peoria, Ill.; Woodbury, Frank, Philadelphia, Pa.